

YAESU
The radio

SCU-17 USB INTERFACE UNIT

Instruction Manual



日本語の説明は 18 ページから記載されています。

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Introduction

The SCU-17 interface unit may be used for CAT control of the transceiver with a computer via a USB connection; and for communications using SSTV, RTTY and PSK digital modes.

Note: YAESU does not produce CAT, SSTV, RTTY and PSK System operating software, due to the wide variety of personal computers, operating systems, and applications in use today.

- ❑ The SCU-17 provides CAT communication through the USB terminal when a PC does not have an RS-232C connection.
- ❑ The SCU-17 is equipped with a USB audio system device, so the TX and RX audio system signals are accessible to the SCU-17 through the USB cable. Therefore, the supplied USB cable is the only connection needed between the SCU-17 and PC.
- ❑ The SCU-17 is equipped with a two-channel USB serial device and enables the various transmission modes and the CAT communication simultaneously.
- ❑ The SCU-17 operates from the USB bus power; you do not need to prepare an external power supply.
- ❑ For RF isolation, the SCU-17 is designed with photo relays for the PTT/FSK terminals. AF transformers are used in the AUDIO IN/OUT lines to provide excellent ground isolation.
- ❑ The SCU-17 is equipped with the TX and RX audio controls on the front panel, for convenient level adjustment.
- ❑ LED indicators on the SCU-17 front panel monitor the PTT and FSK control. The operating conditions may be quickly confirmed.

Virtual COM port driver Installation

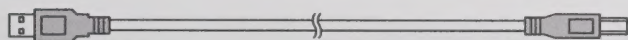
Install the virtual COM port driver on the personal computer before using the SCU-17 USB interface unit.

Please see the USB Driver (Virtual COM Port Driver) on the Yaesu Website for details refer to (<http://www.yaesu.com/>) in the FTDX1200 product files section.

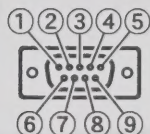
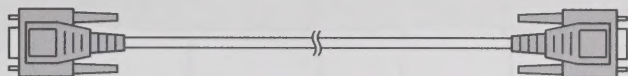
Note: Do not connect the USB cable and SCU-17 to your personal computer until after the “virtual COM port driver” installation is completed, because an incorrect driver may be installed.

- ☐ For assistance with the software port configuration, refer to “How to Confirm the Installation, and the COM Port Number” in the “Virtual COM port Driver Installation Manual”.
- ☐ For information on port configuration for commercial and free computer software, refer to the manual for the software being used.
- ☐ When using the USB cable to supply TX and RX audio signals, set the Sound Card (input and output) settings to “USB Audio CODEC”.
- ☐ When using the USB cable for computer TX control, the transceiver may switch to transmit mode when the computer is started, etc.
- ☐ YAESU does not provide technical support for the use or operation of commercial or free computer software.

USB cable (Type "A" male to Type "B" male) 1 pc

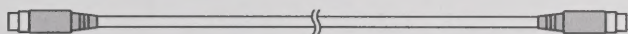


RS-232C cable (female to female, Straight Type) 1 pc



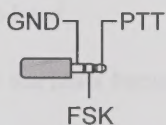
- | | | | |
|---|------------|---|-----|
| ① | N/A | ⑥ | N/A |
| ② | SERIAL IN | ⑦ | RTS |
| ③ | SERIAL OUT | ⑧ | CTS |
| ④ | N/A | ⑨ | NC |
| ⑤ | GND | | |

Connection cable (MDIN6P - MDIN6P) 1 pc

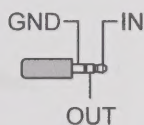


- | | | | |
|---|----------|---|---------|
| ① | DATA OUT | ④ | FSK OUT |
| ② | GND | ⑤ | DATA IN |
| ③ | DATA PTT | ⑥ | SQL IN |

3.5 mm Stereo plug 2 pcs



PTT/FSK

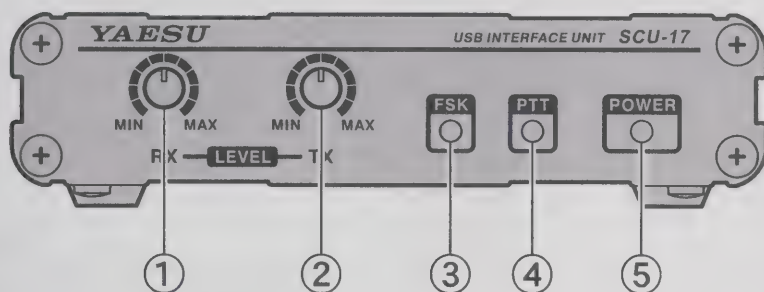


AUDIO

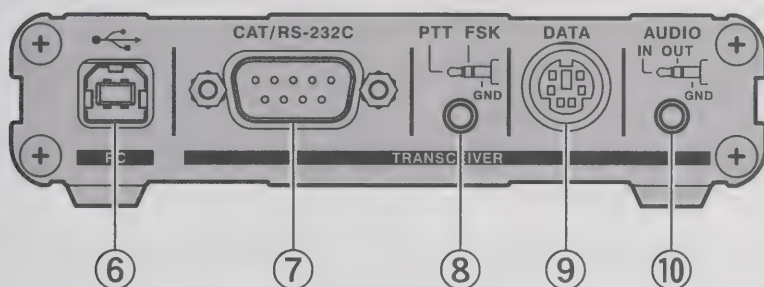
Instruction manual

Controls & Connections

Front Panel



Rear Panel



① RX audio level control knob

This knob adjusts the RX audio level.

② TX audio level control knob

This knob adjusts the TX audio level.

③ FSK Indicator

This indicator illuminates when the Mark frequency is shifted.

④ TX Indicator

This indicator illuminates during transmission.

⑤ POWER Indicator

⑥ USB Connector

Connect to a computer from this jack using the supplied USB cable.

⑦ CAT/RS-232C Jack

This 9-pin serial DB-9 jack allows CAT communication of the transceiver.

Connect a supplied RS-232C cable here and to the transceiver.

⑧ 3.5 mm stereo Jack (PTT/FSK)

This 3-conductor, 3.5 mm stereo jack is used for PTT/FSK. For RF isolation, these terminals are designed with photo relays.

⑨ DATA Jack

This 6-pin (MDIN6P) jack allows DATA communication of the transceiver.

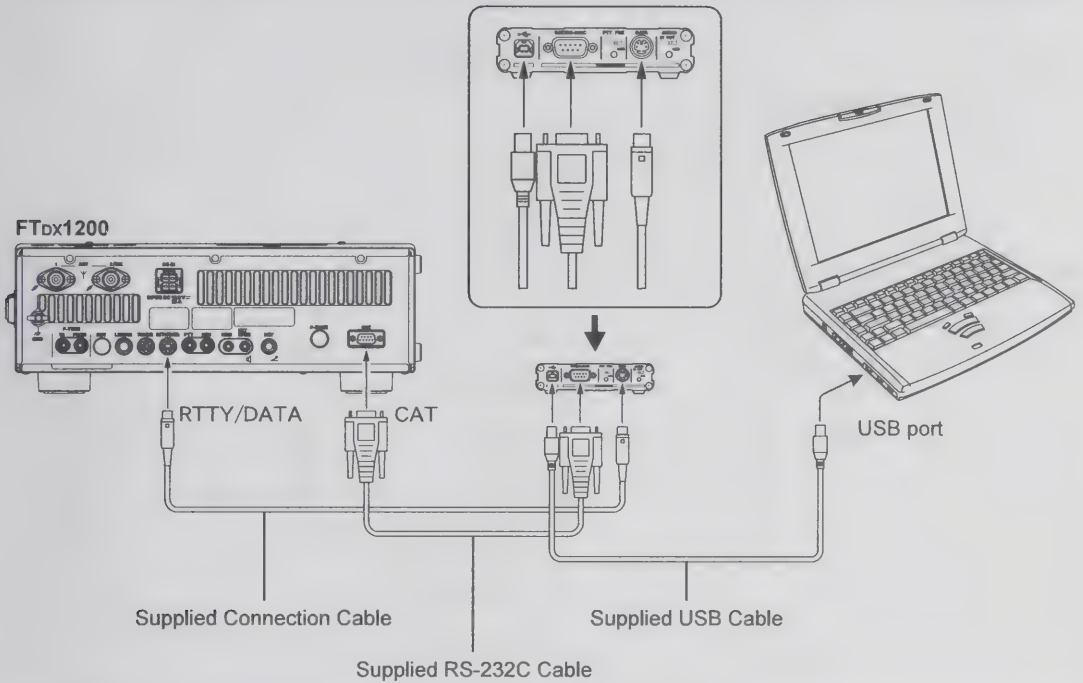
⑩ 3.5 mm stereo Jack (Audio IN/OUT)

This 3-conductor, 3.5 mm stereo jack is used for Audio IN/OUT. For RF isolation, AF transformers are used in the AUDIO IN/OUT lines.

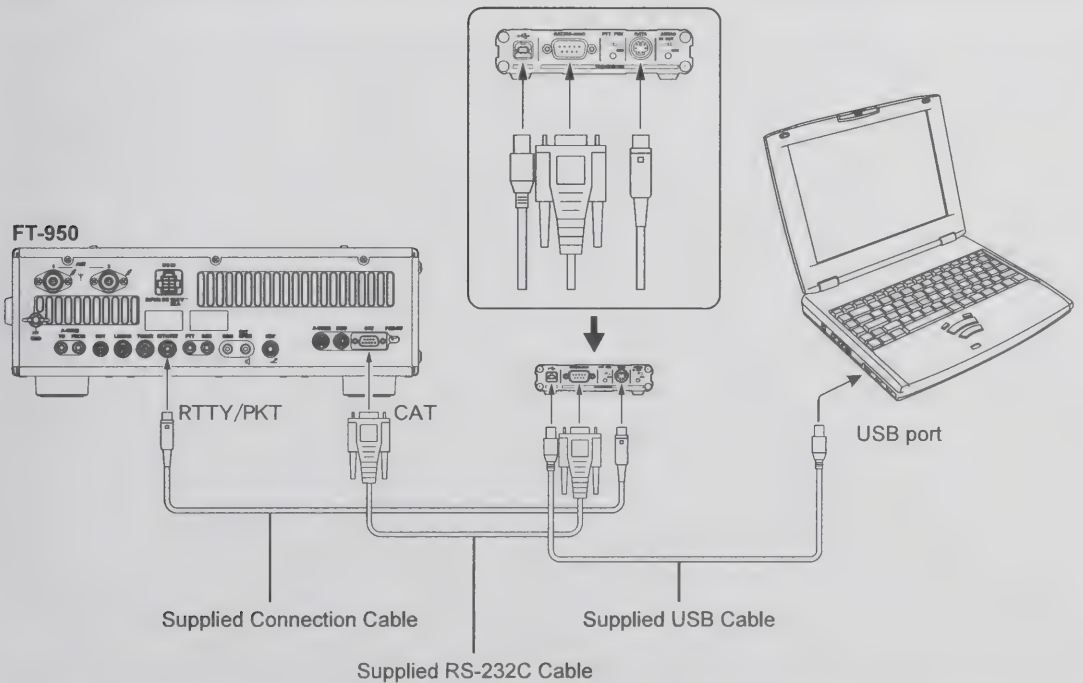
This Jack is equipped with an attenuator that is applied to the audio output.

See page 15 for details about attenuation.

FTDx1200

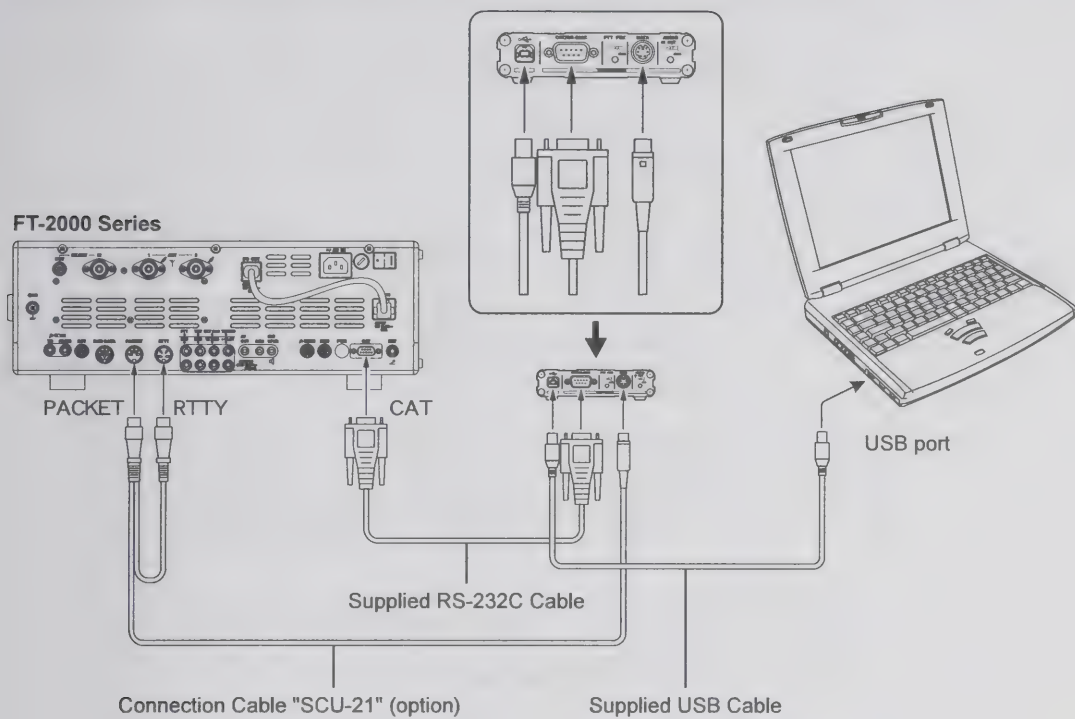


FT-950

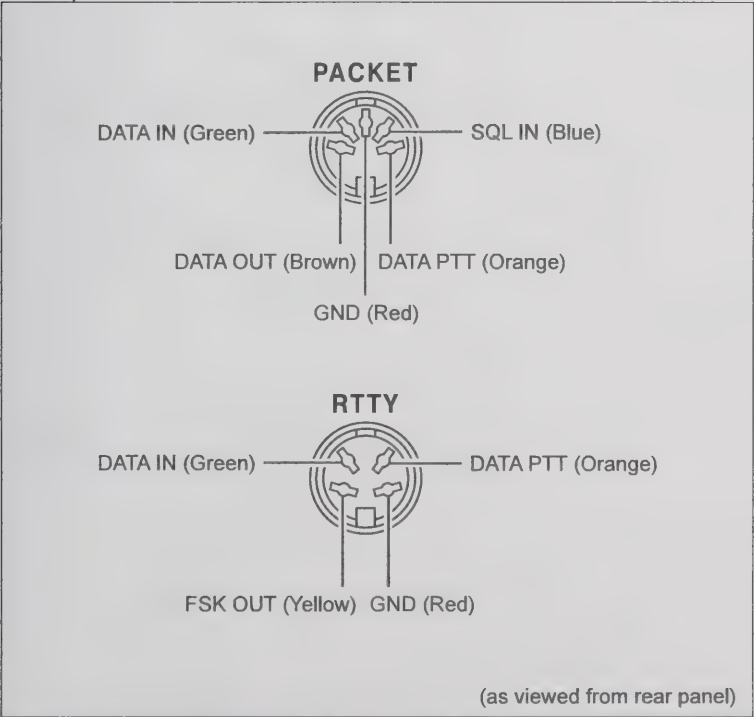
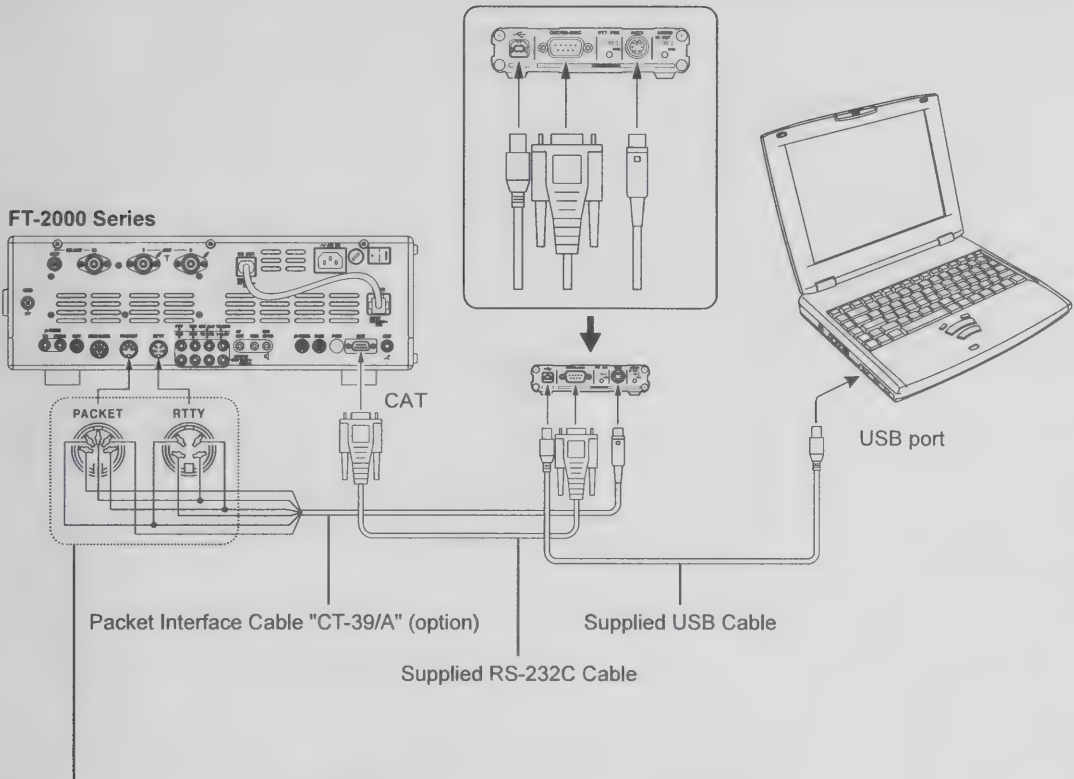


System Setup

FT-2000 Series / SCU-21

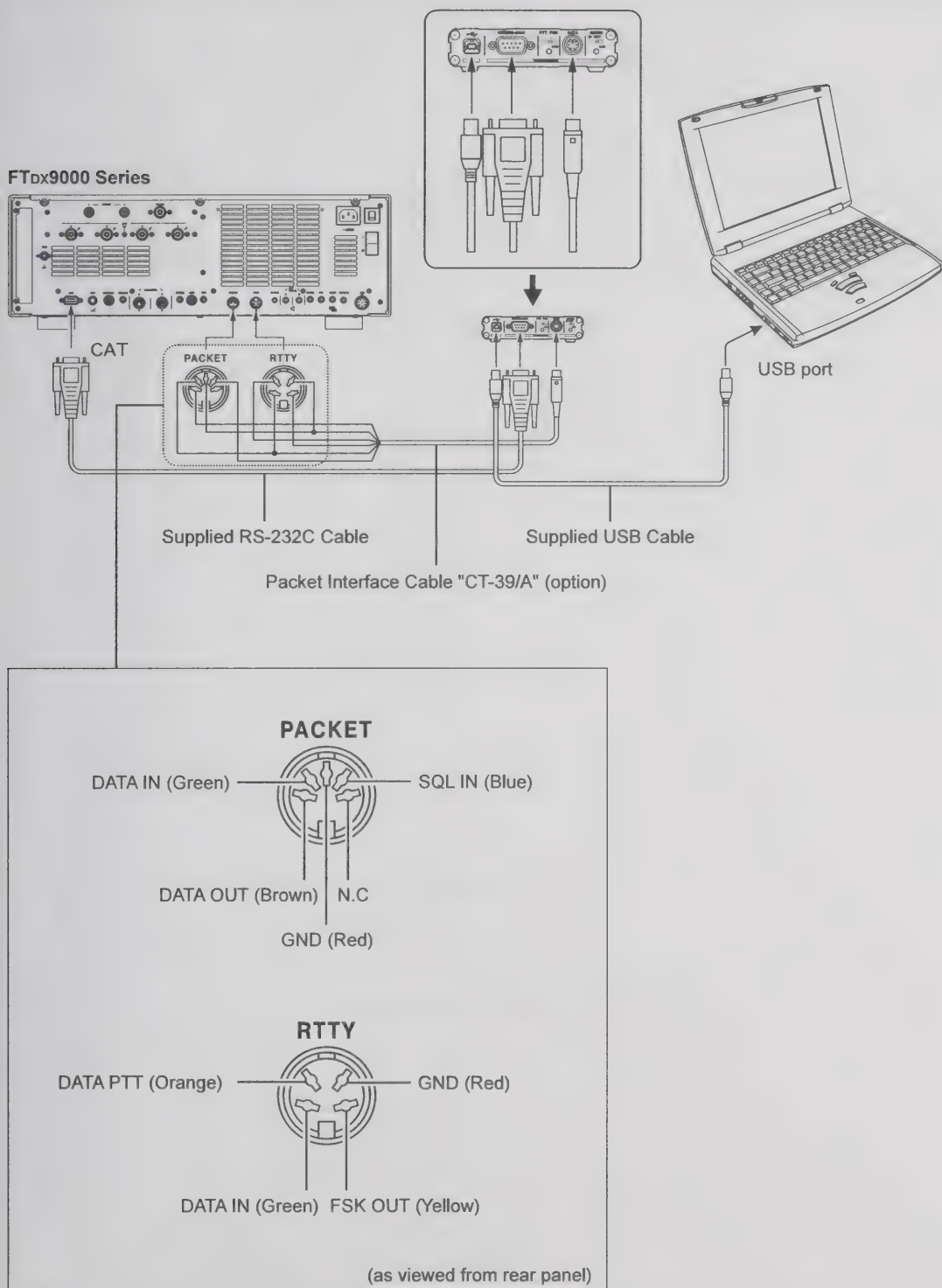


FT-2000 Series / CT-39A

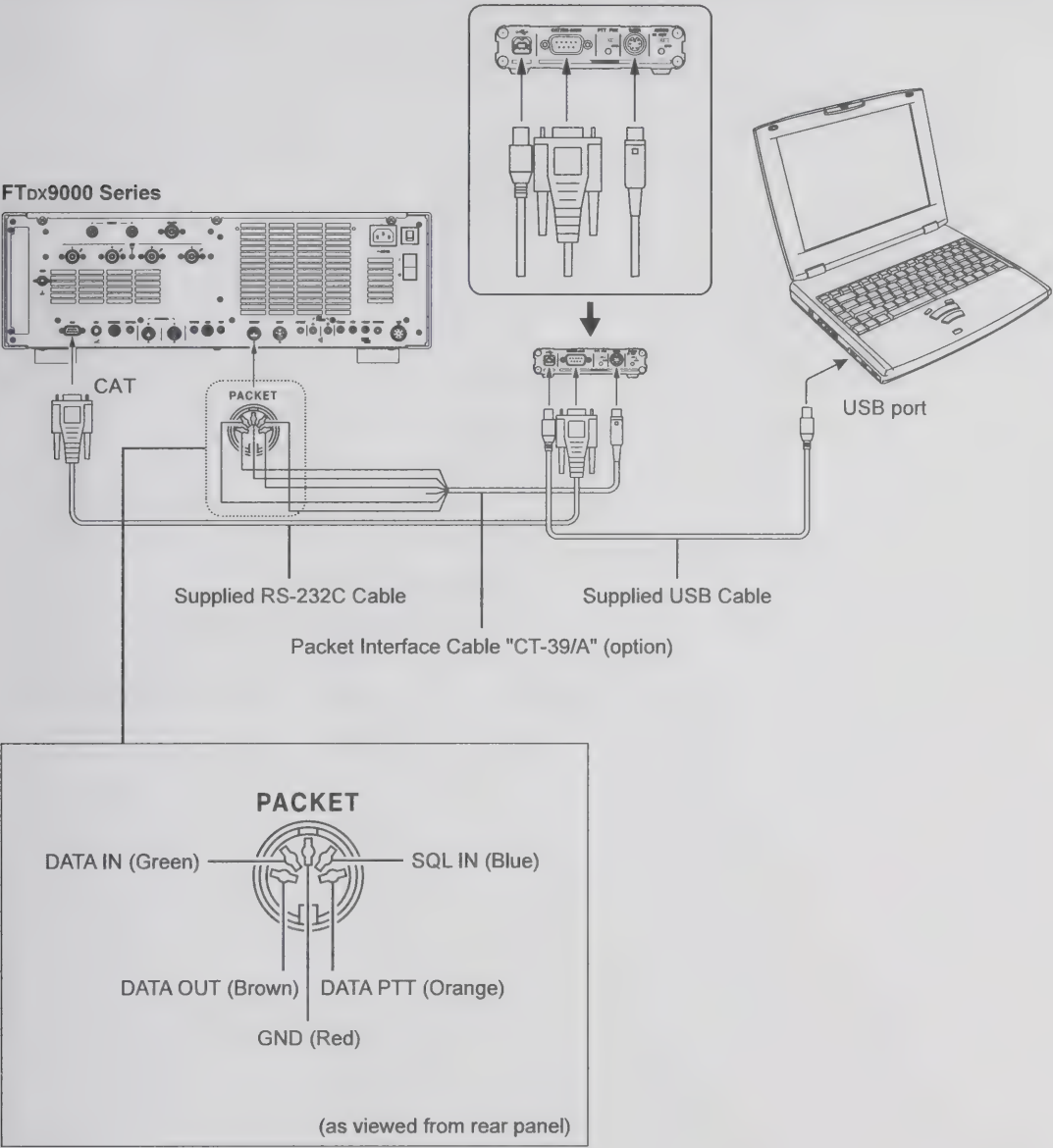


System Setup

FTDx9000 Series (SSTV/PSK/RTTY)

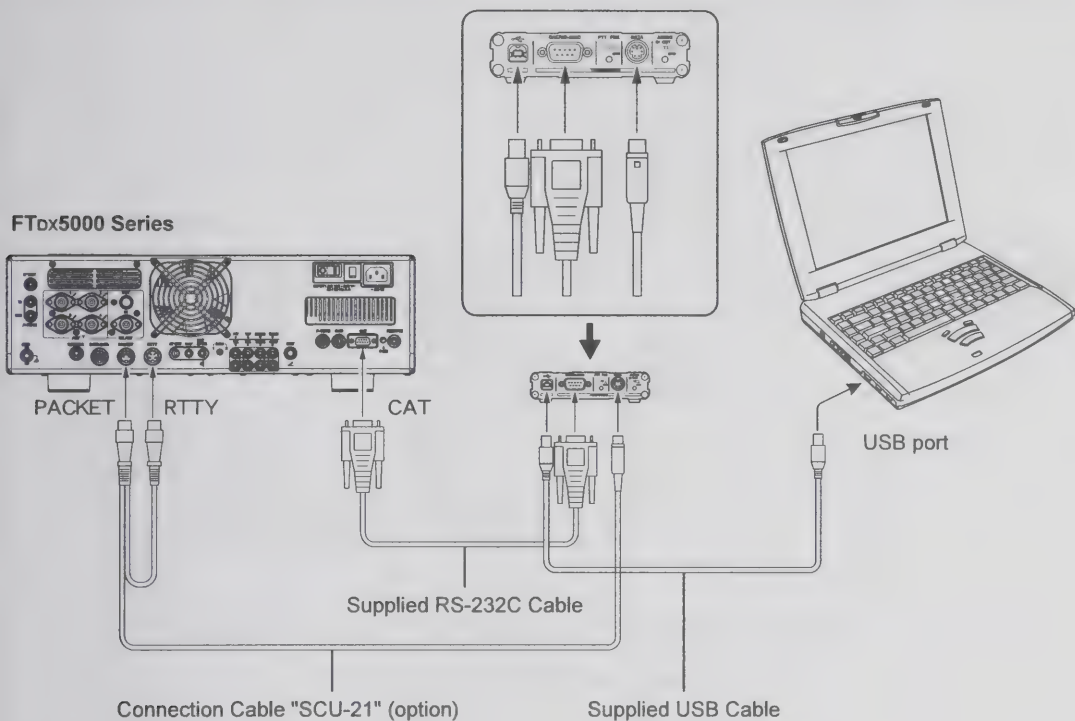


FTDX9000 Series (PSK)



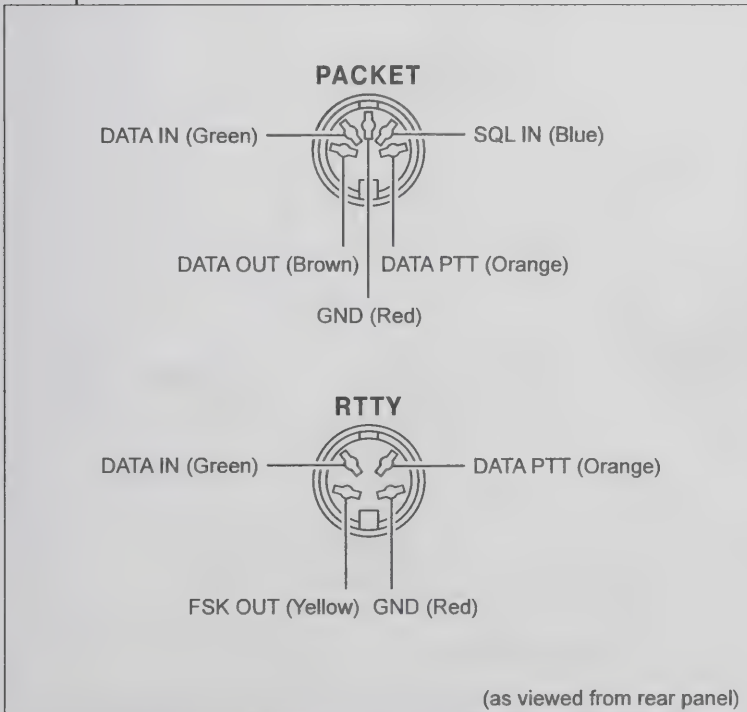
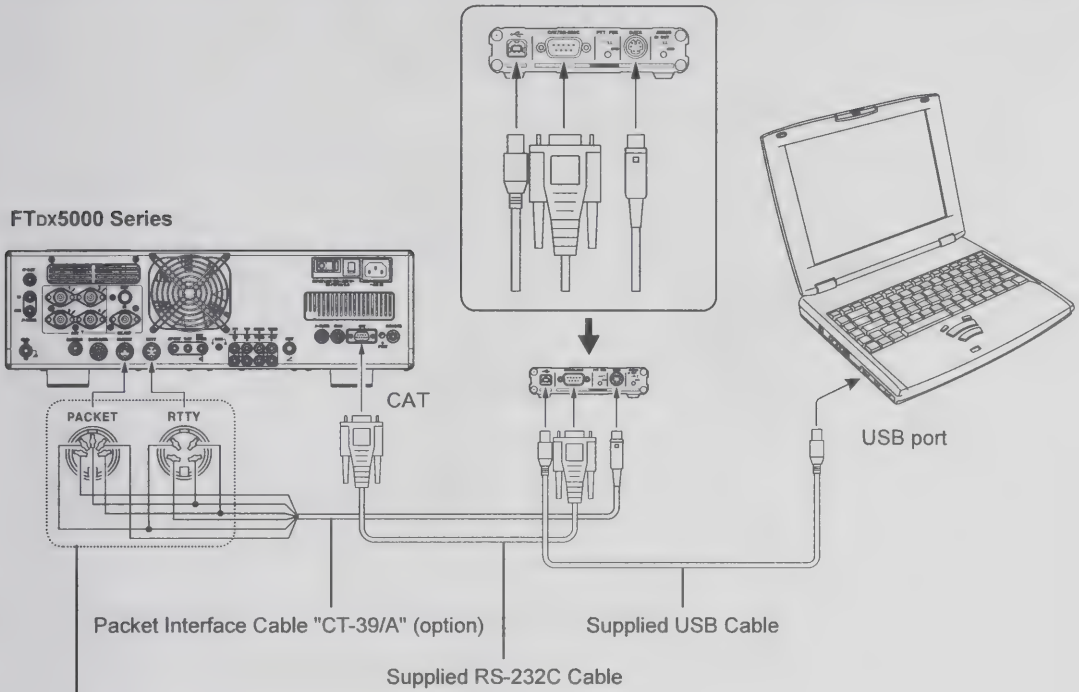
System Setup

FTDx5000 Series / SCU-21



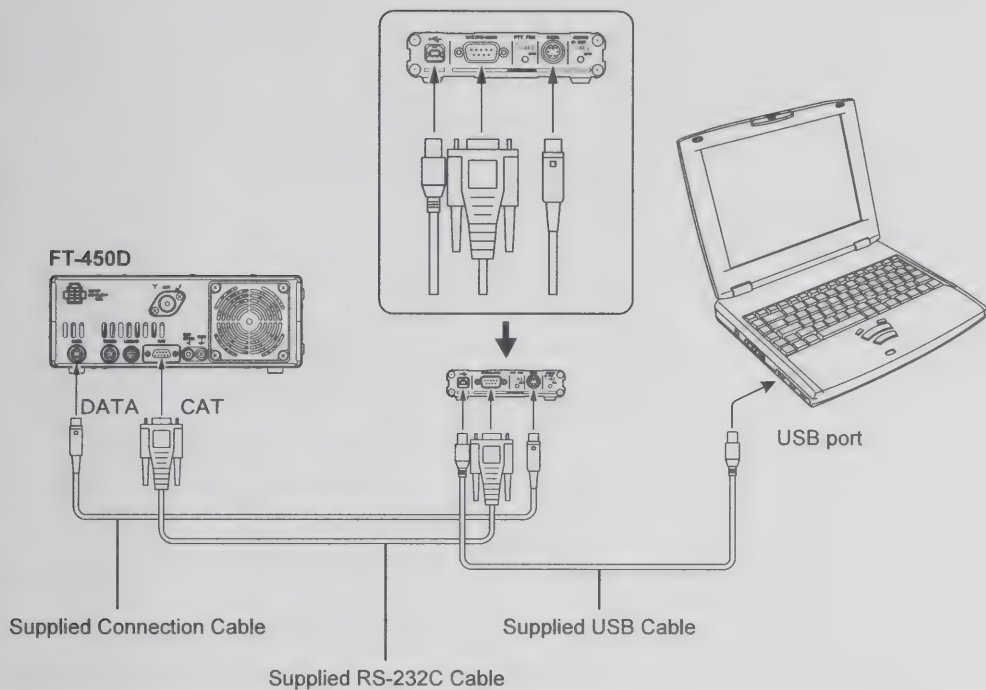
FTDx5000 Series / CT-39A

FTDx5000 Series

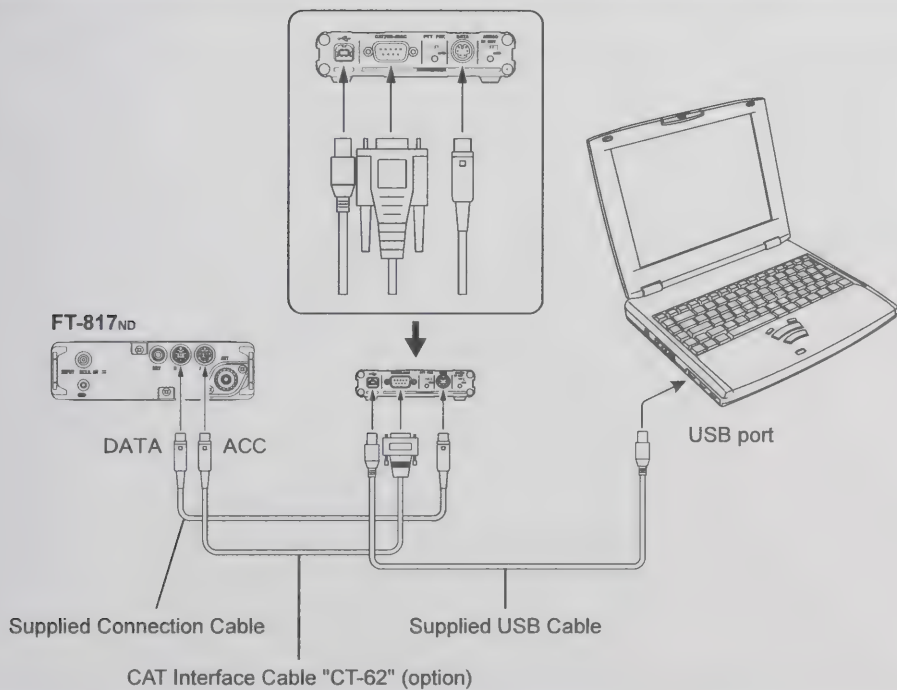


System Setup

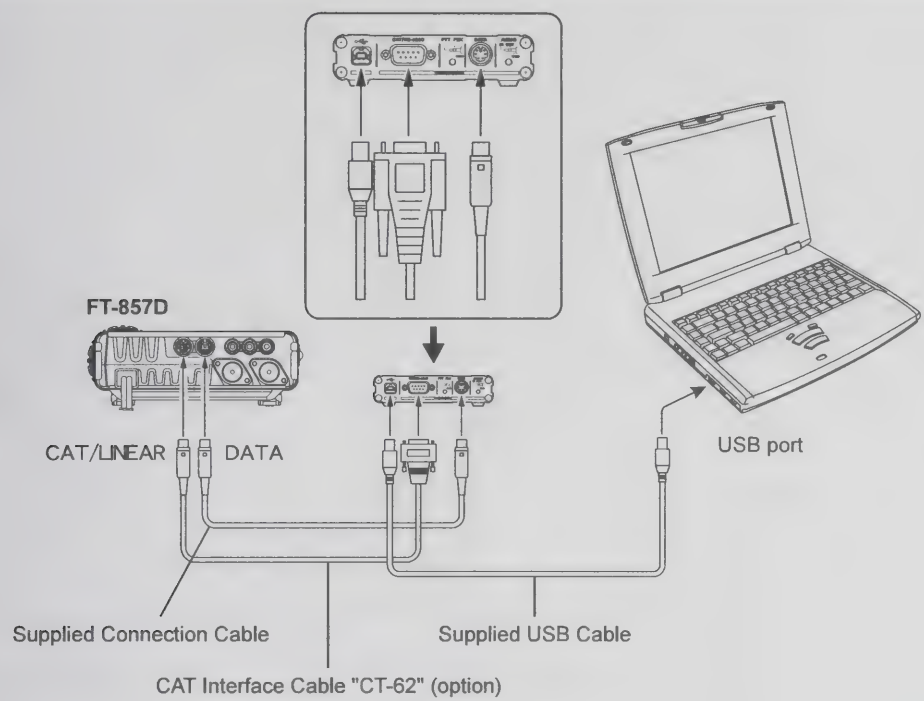
FT-450D



FT-817ND

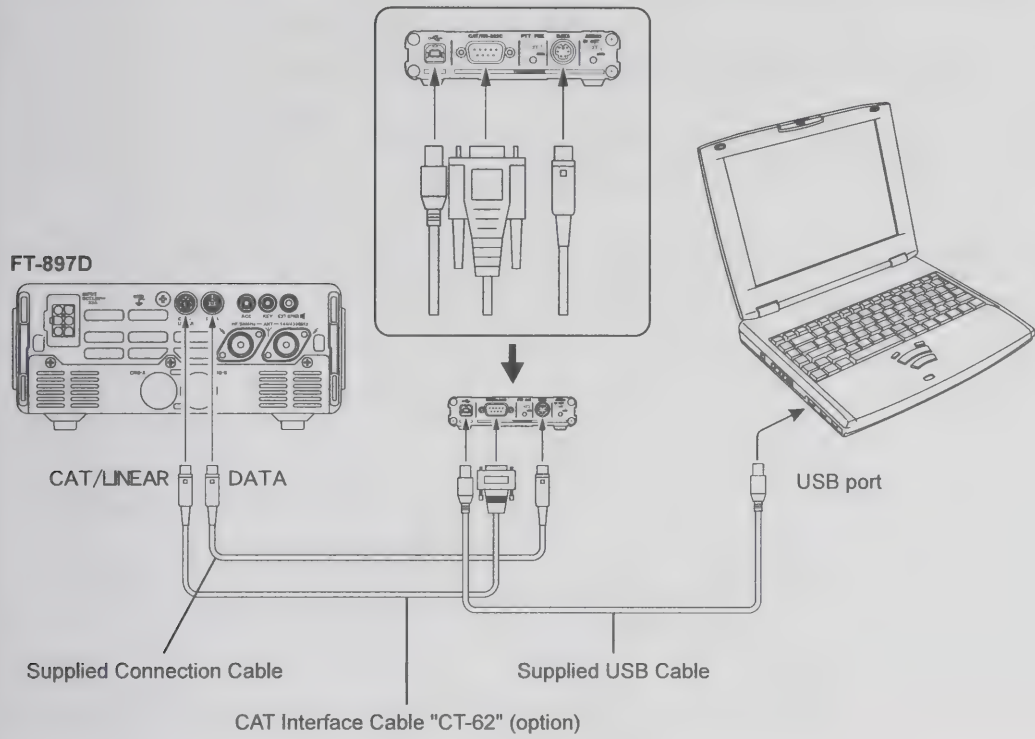


FT-857D

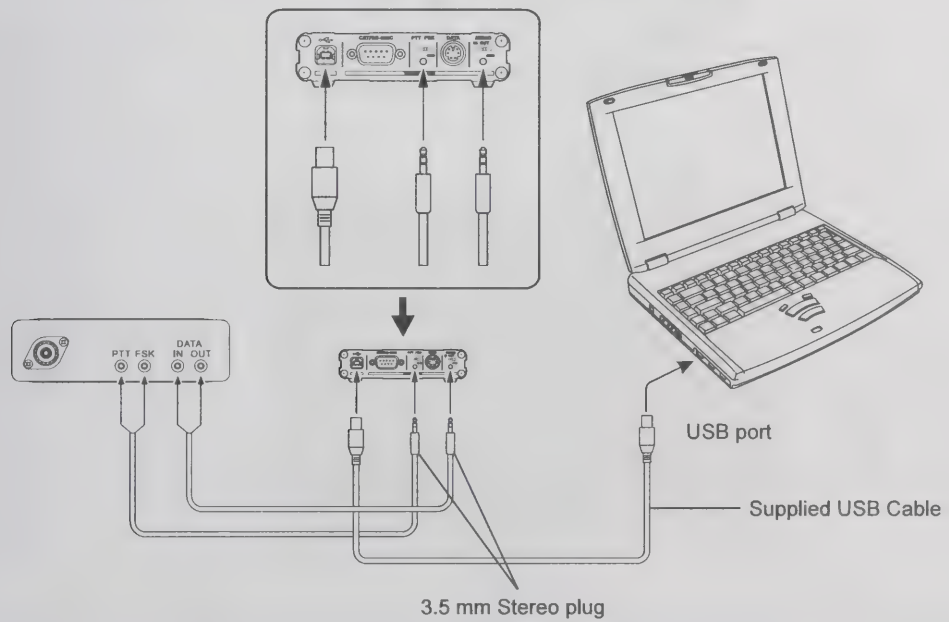


System Setup

FT-897D



Interfacing to other transceivers



PTT/FSK control and Attenuator Setting

The PTT/FSK setting may be changed and the audio output attenuator may be enabled by changing the configuration of an internal switch and a jumper.

1. Disconnect all the cables from the SCU-17.
2. Referring to Figure 1, remove the 4 screws attaching the top case, then remove the top case.
3. Refer to Figure 2 for the location of switch (S1001) and jumper (J1006).
4. Set the switch (S1001) and jumper (J1006).

S1001: PTT/FSK control setting

J1006: Attenuator setting to the audio output of the Audio IN/OUT jack.

5. Replace the top case, using the 4 screws removed in step (2) above.
6. Reconnect the cables to the SCU-17.

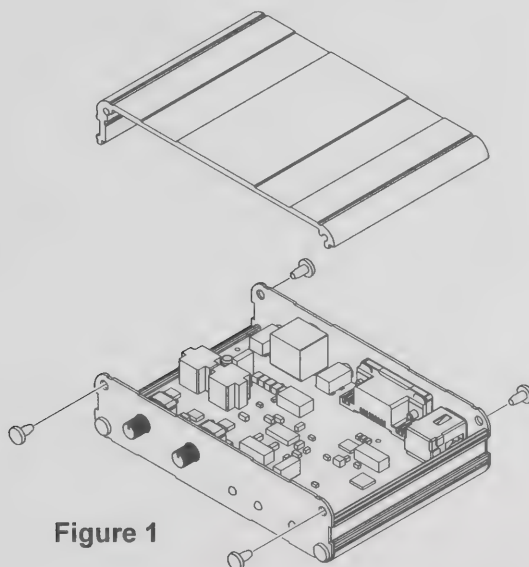
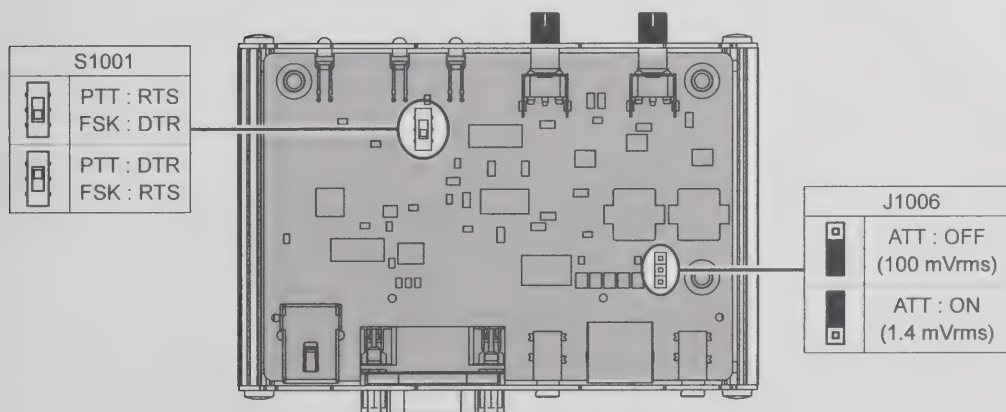


Figure 1



S1001	
	PTT : RTS FSK : DTR
	PTT : DTR FSK : RTS

J1006	
	ATT : OFF (100 mVrms)
	ATT : ON (1.4 mVrms)

Figure 2

Specifications

Supply Voltage:	DC 5.0 V \pm 5%, Negative Ground
Current Consumption:	130 mA
Data Jack:	PTT: Maximum output +25 V, 50 mA (open collector) FSK: Maximum output +25 V, 50 mA (open collector) DATA-IN: 100 mVrms @ 10 k Ohms DATA-OUT: 100 mVrms @ 600 Ohms
FSK/PTT Jack:	PTT: Maximum output +30 V, 250 mA (open drain) FSK: Maximum output +30 V, 250 mA (open drain)
AUDIO Jack:	AUDIO-IN: 100 mVrms @ 600 Ohms AUDIO-OUT: 100 mVrms @ 600 Ohms
CAT/RS-232C Jack:	RS-232C voltage level
USB Connector:	USB 1.1 or USB 2.0, USB bus power
Case Size:	4.37" (W) x 1.0" (H) x 2.91" (D) (111 x 25.4 x 74.0 mm)
Weight (approx.):	8.1 oz (230 g)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) this device may not cause harmful interference, and (2) this device must accept any interference including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.

特徴 / 準備

特徴

SCU-17は、無線機のCAT通信、SSTV、RTTY、PSKなどの各種送信制御をUSBケーブルで接続したパソコンで行うことができるインターフェースユニットです。

- RS-232Cの端子がないパソコンでもUSB端子を用いてCAT通信を行うことができます。
- USBオーディオデバイスを搭載し、送信および受信オーディオ信号はUSBケーブルにて通信されますので、SCU-17とパソコンの接続は、付属のUSBケーブルだけで接続可能です。
- 2チャンネルのUSBシリアルデバイスを搭載している為、CAT通信と同時に各種の送信制御を行うことが可能です。
- USBバスパワーにて動作しますので、外部電源は不要です。
- RFインターフェア対策の為、フォトリレーを使用したPTT/FSK端子および、オーディオラインにトランスを使用し、GNDアイソレーションされているAUDIO IN/OUT端子を備えています。
- 送信および受信オーディオレベルの調整用ボリュームをフロントパネルに配置しましたので、各レベル調整を容易に行うことができます。
- PTTおよび、FSKコントロールのモニター用LEDインジケータをフロントパネルに配置しましたので、一目で動作状態を確認することができます。

準備

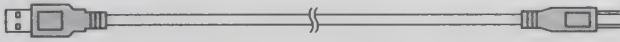
SCU-17を使用するには、使用するパソコンに、あらかじめ仮想COMポートドライバをインストールする必要があります。

SCU-17に仮想COMポートドライバは付属していませんので、当社ホームページ (http://www.yaesu.com/jp/amateur_index/driver/GetStart.html) の「SCU-17 USB インターフェースユニット 仮想COMポートドライバ」掲載ページよりダウンロードしてください。

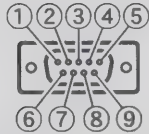
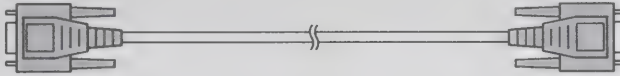
【ご注意】

- ・ 仮想COMポートドライバのインストールが完了するまでは、SCU-17とパソコンとをUSBケーブルで接続しないで下さい。仮想COMポートドライバをインストールしないでSCU-17とパソコンとを接続した場合、誤ったドライバがインストールされて正しく動作しなくなる恐れがあります。
- ・ SCU-17を使用して無線機の通信制御を行うためのソフトのサポートは行っていません。
- ・ ご使用の無線機に付属装置（本機）を接続して、SSTV、RTTY、PSKなどのモードを運用する時は、変更申請（届出）が必要になる場合があります。
また、技術基準適合証明設備でない設備の変更申請には、ティエスエス（TSS）株式会社による保証認定が必要になります。

- ・ USB ケーブル (A-B タイプ) 1



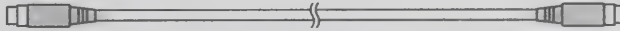
- ・ RS-232C ケーブル (メス-メス、ストレートタイプ) 1



① N/A
② SERIAL IN
③ SERIAL OUT
④ N/A
⑤ GND

⑥ N/A
⑦ RTS
⑧ CTS
⑨ NC

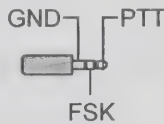
- ・ コネクションケーブル (Mini-Din 6pin - Mini-Din 6pin) 1



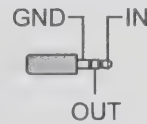
① DATA OUT
② GND
③ DATA PTT

④ FSK OUT
⑤ DATA IN
⑥ SQL IN

- ・ 3.5 φ ステレオプラグ 2



PTT/FSK

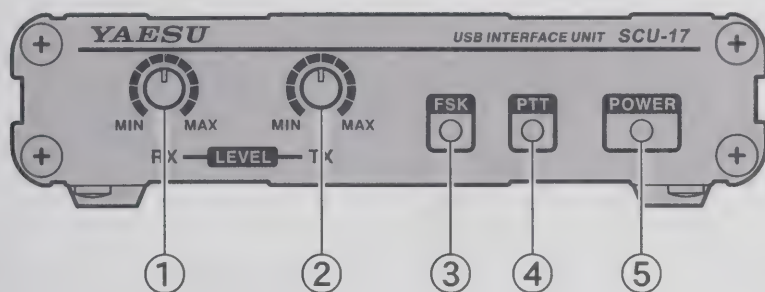


AUDIO

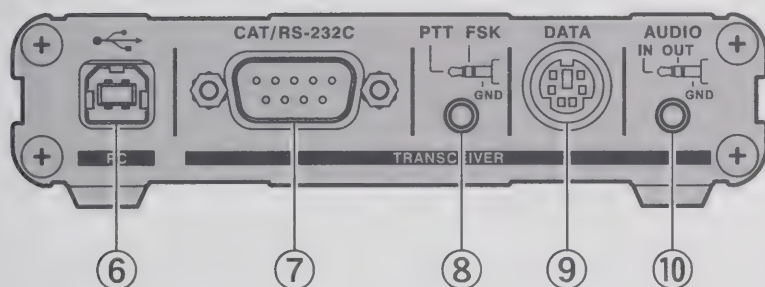
- ・ 取扱説明書

各部の説明

フロントパネル

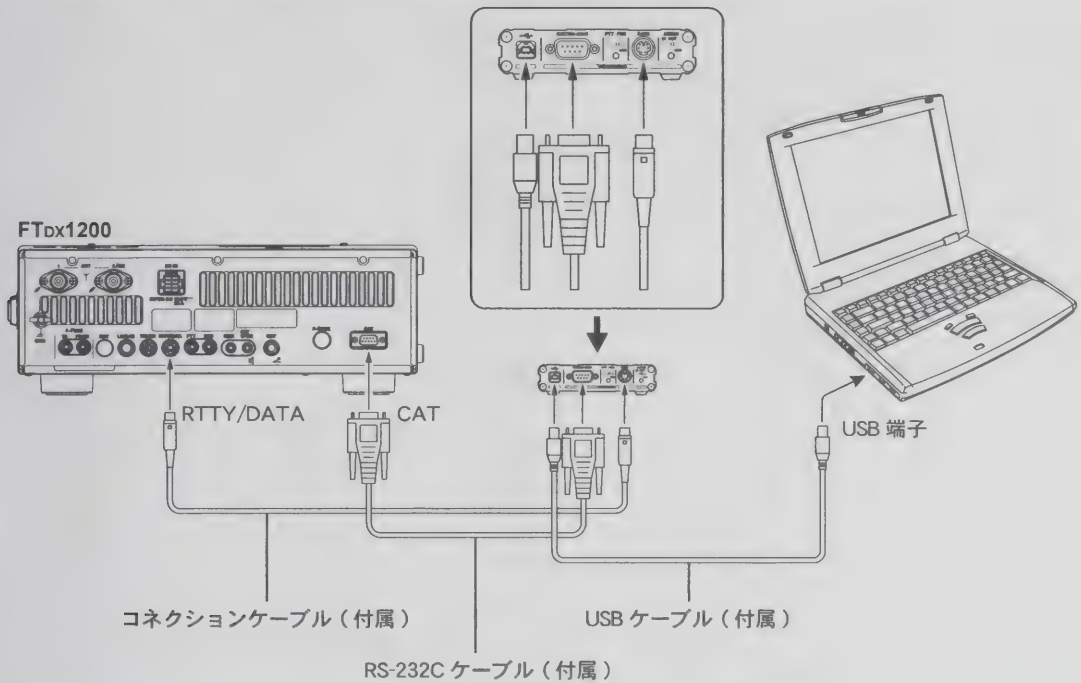


リアパネル

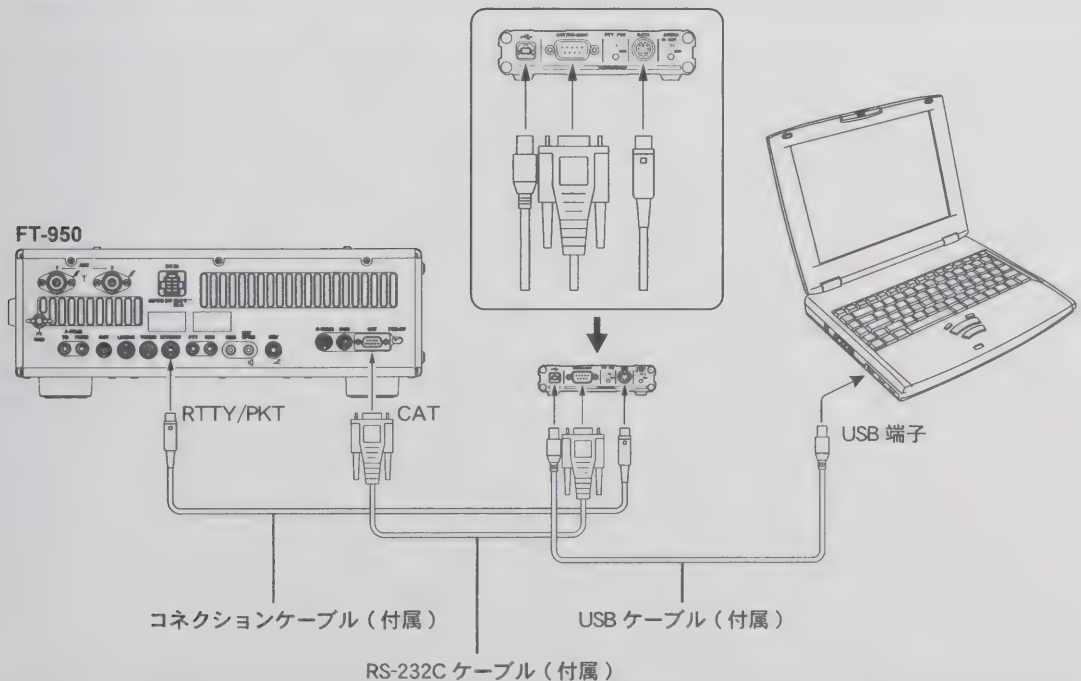


- ① **受信レベル調整ツマミ**
受信オーディオレベルの調整を行うツマミです。
- ② **送信レベル調整ツマミ**
送信オーディオレベルの調整を行うツマミです。
- ③ **FSK インジケータ**
マーク周波数が、あらかじめ設定してある周波数分シフトした際に点灯するインジケータです。
- ④ **TX インジケータ**
送信時に赤く点灯するインジケータです。
- ⑤ **POWER インジケータ**
- ⑥ **USB 端子**
付属の USB ケーブルを使用して、パソコンの USB 端子と接続します。
- ⑦ **CAT/RS-232C 端子**
付属の RS-232C ケーブルを使用して、無線機の CAT/RS-232C 端子と接続します。
- ⑧ **3.5-mm ステレオジャック (PTT/FSK)**
RF インターフェアを防ぐために、フォトリレーを使用した PTT/FSK 端子です。
- ⑨ **DATA ジャック**
付属のコネクションケーブルを使用して、無線機の DATA 端子や PACKET 端子と接続します。
- ⑩ **3.5-mm ステレオジャック (AUDIO IN/OUT)**
RF インターフェアを防ぐために、オーディオラインにトランスを使用し、GND アイソレーション可能な AUDIO IN/OUT 端子です。
なお、OUT 端子 (送信オーディオ出力) は、SCU-17 内部のジャンパー設定を変更することにより、アッテネーターを動作させることができます (31 ページ参照)。

FT_DX1200 との接続例

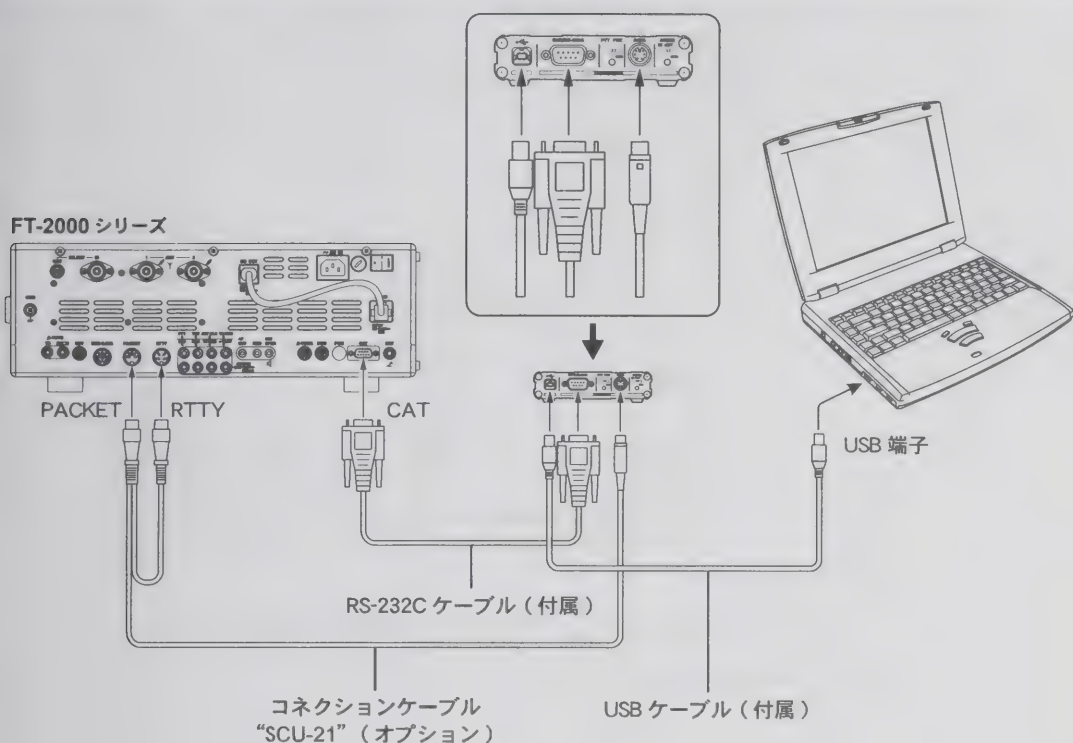


FT-950 との接続例

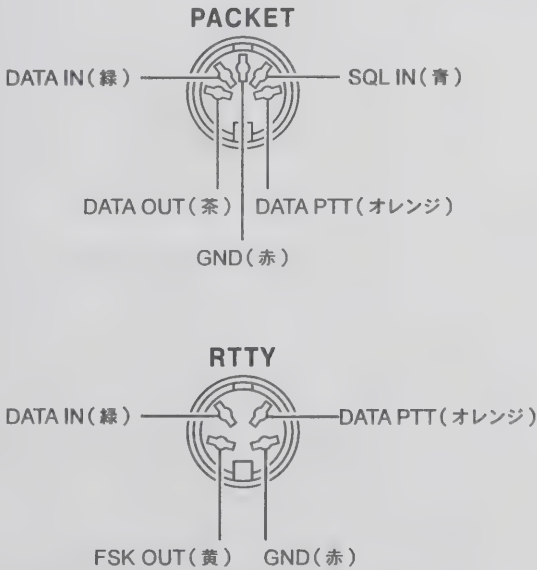
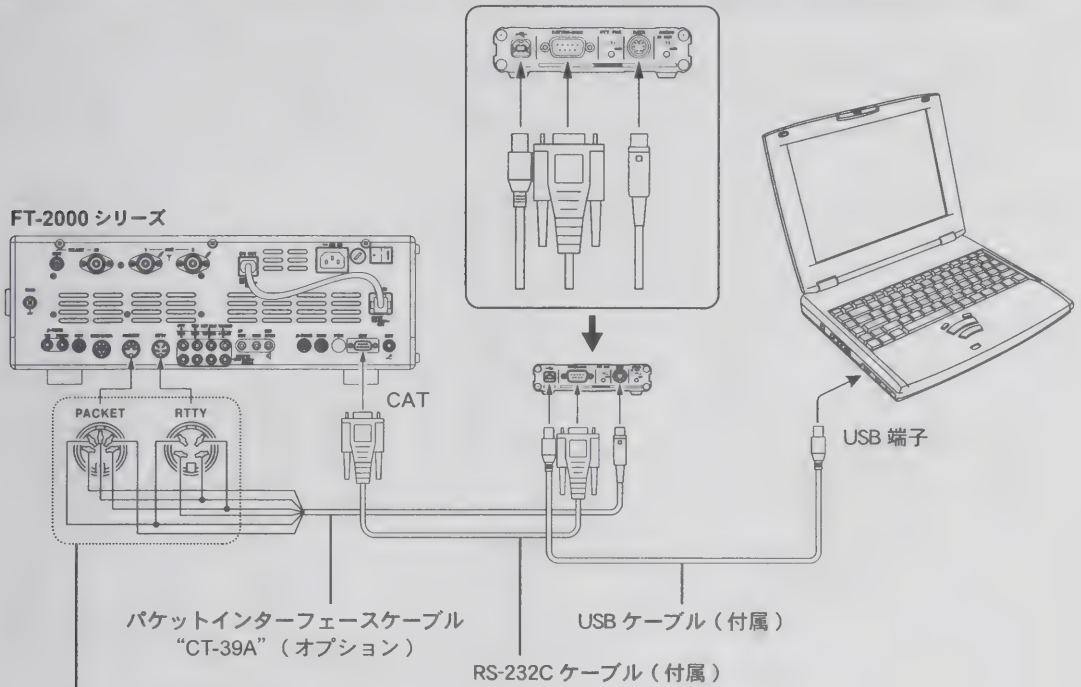


無線機との接続

FT-2000 シリーズとの接続例（オプションの SCU-21 を使用する場合）



FT-2000 シリーズとの接続例（オプションの CT-39A を使用する場合）



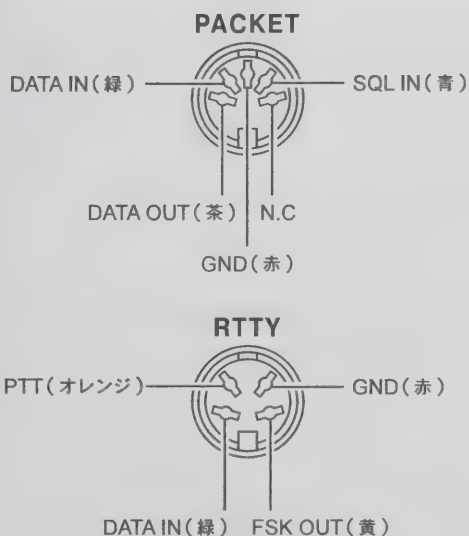
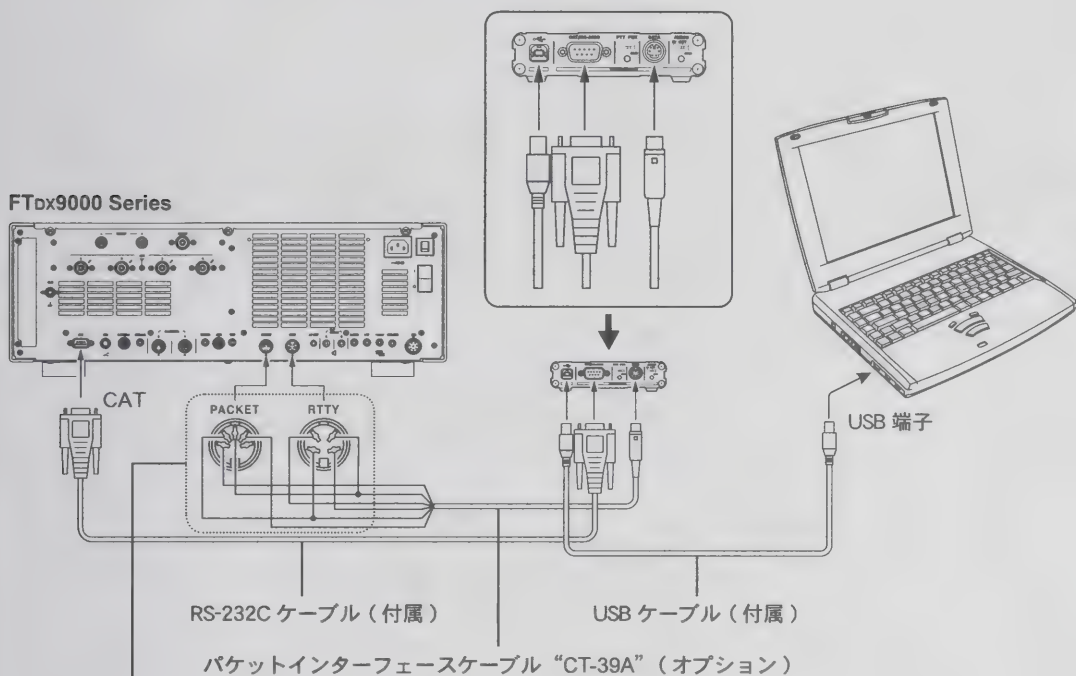
※イラストは、無線機を背面から見た時の端子です。

無線機との接続

FTDx9000 シリーズとの接続例 (SSTV/PSK/RTTY)

RTTY および、SSTV (SSB モード)、PSK (SSB モード) で運用する場合は、下のイラストを参考に接続してください。

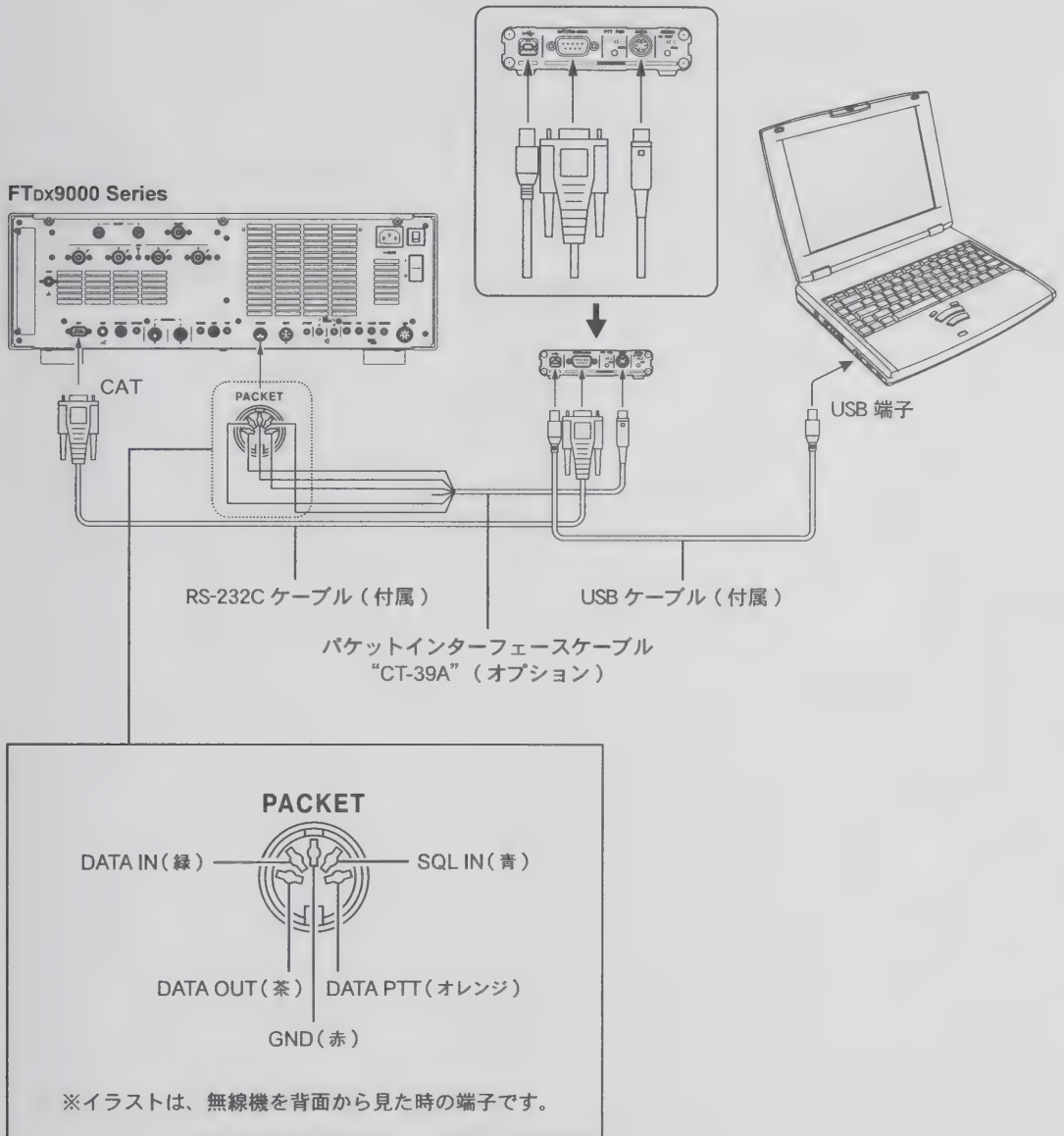
なお、SSB モードで運用する場合は、メニューモード「No.077 SSB MIC SELECT」を「DATA」に設定してください。



※イラストは、無線機を背面から見た時の端子です。

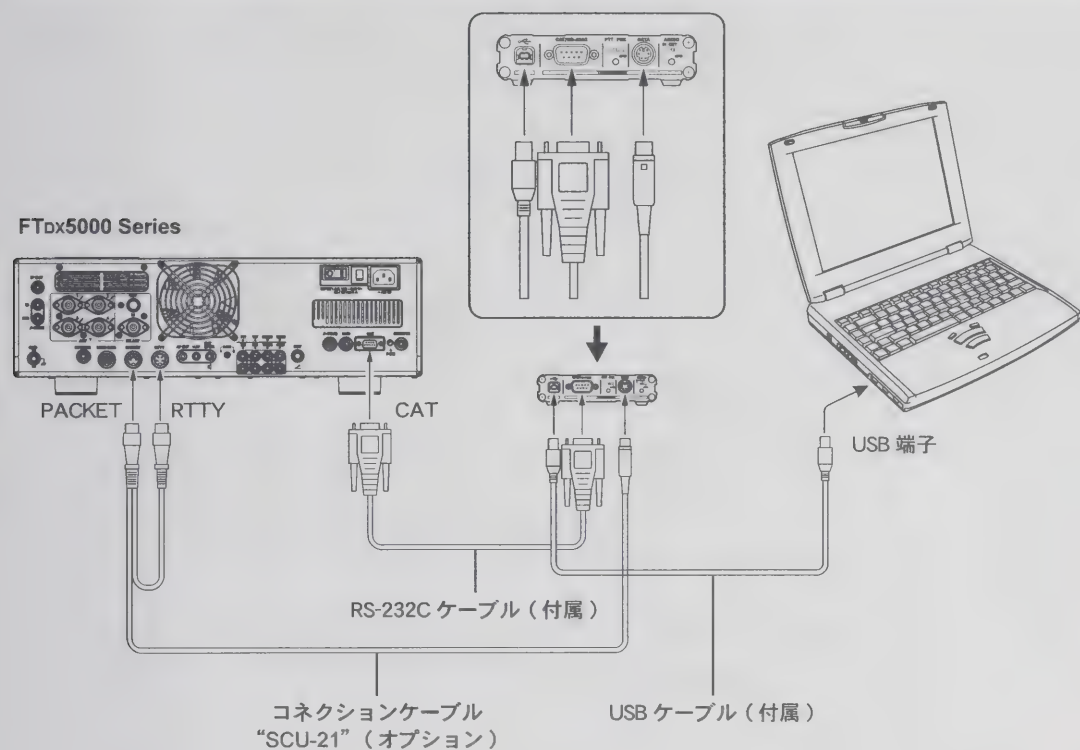
FTDx9000 シリーズとの接続例 (PSK)

PSK を PKT モードで運用する場合は、下のイラストを参考に接続してください。



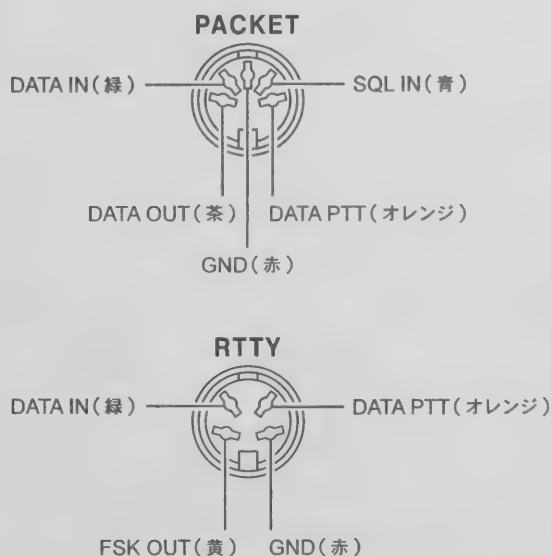
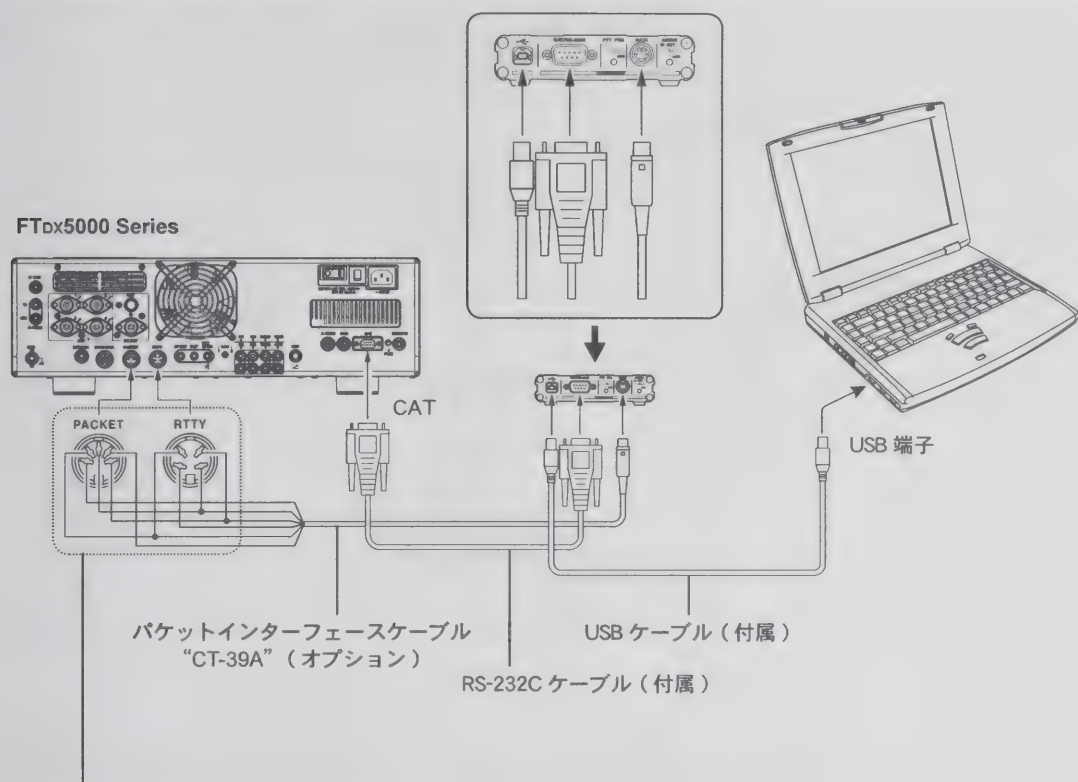
無線機との接続

FTDx5000 シリーズとの接続例 (オプションの SCU-21 を使用する場合)



無線機との接続

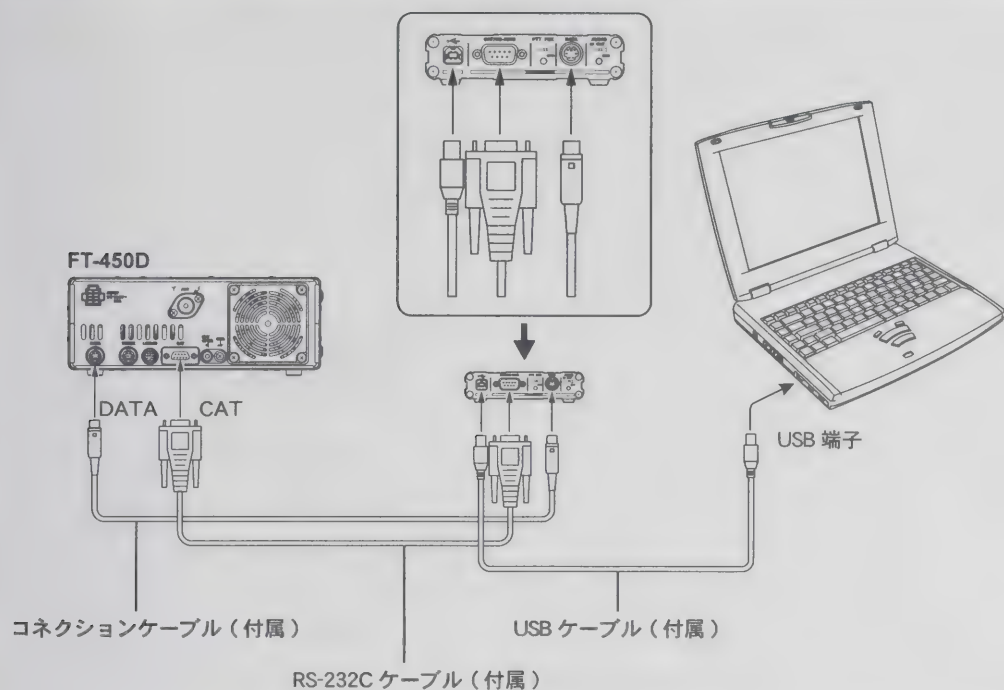
FTDX5000 シリーズとの接続例 (オプションの CT-39A を使用する場合)



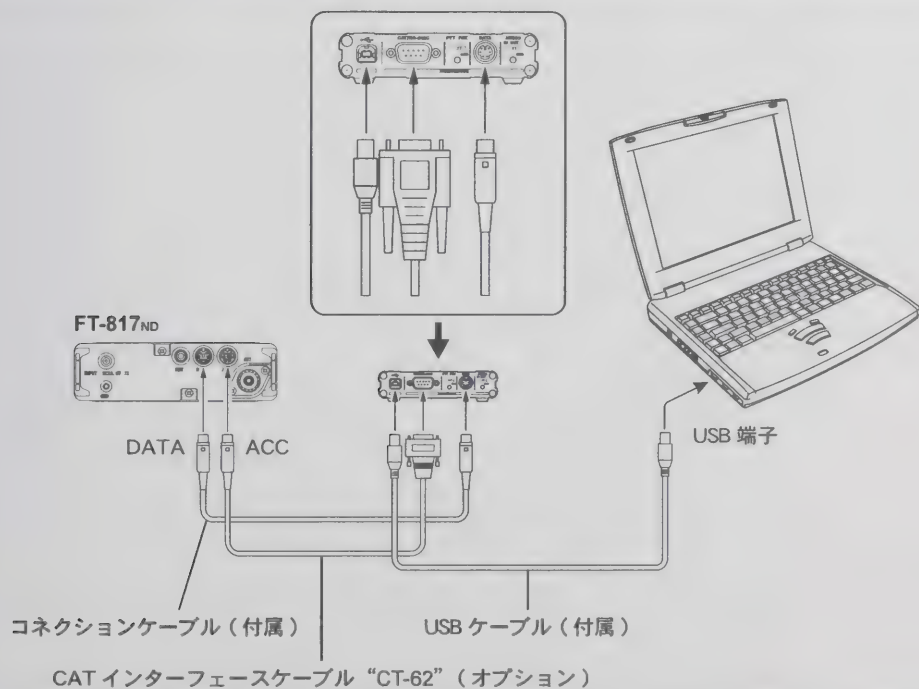
※イラストは、無線機を背面から見た時の端子です。

無線機との接続

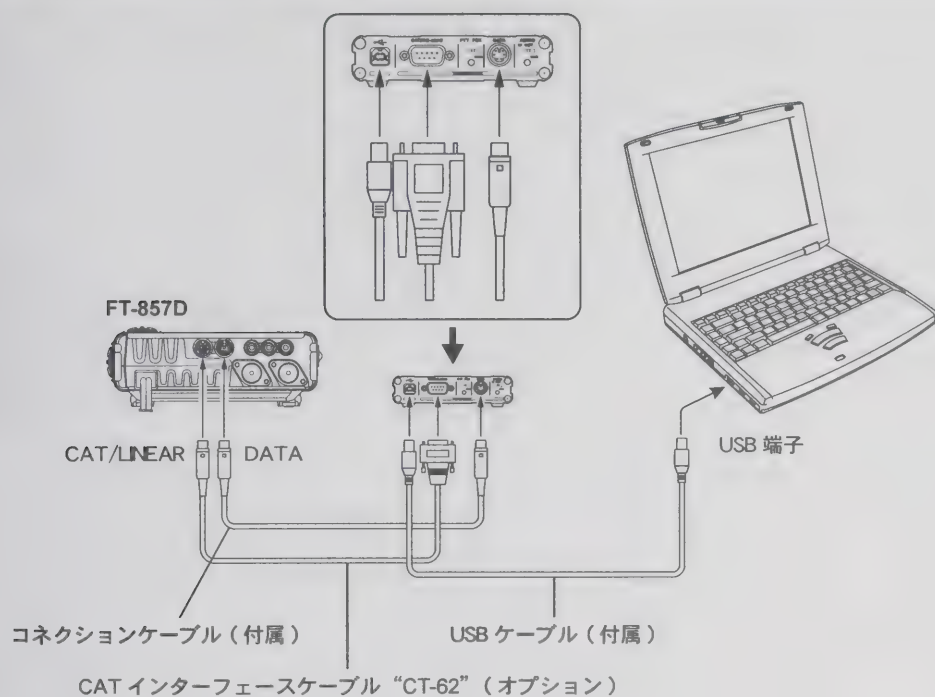
FT-450D との接続例



FT-817ND との接続例

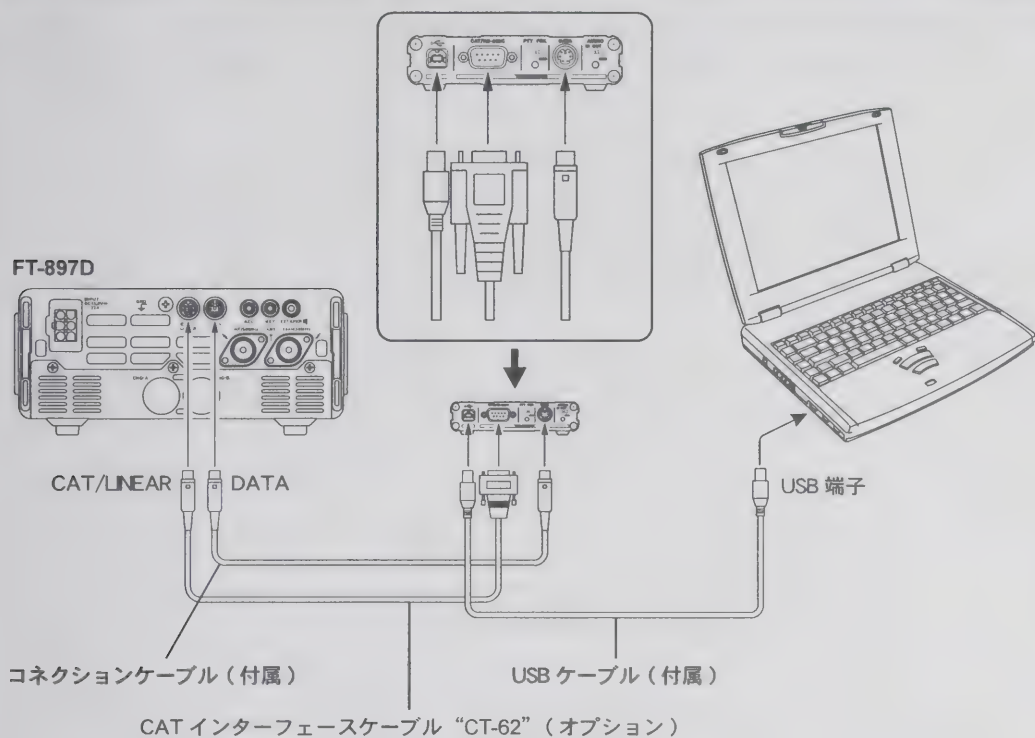


FT-857D との接続例



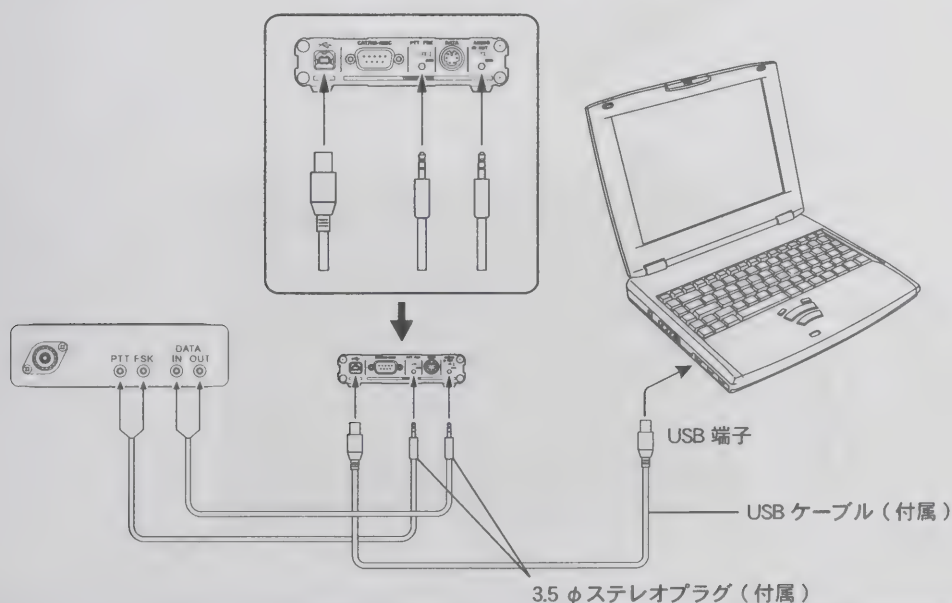
無線機との接続

FT-897D との接続例



その他の無線機との接続例

付属の 3.5 φ ステレオプラグを使用して、下図を参考に接続してください。



SCU-17 は、内部のジャンパー設定を変更することにより、AUDIO IN/OUT 端子の送信オーディオ出力側にアッテネーターを動作させることができます。

また、内部のスイッチを切り換えることにより、PTT/FSK の制御 (PTT 制御 : RTS、FSK 制御 : DTR) を変更 (PTT 制御 : DTR、FSK 制御 : RTS) することができます。

1. SCU-17 に接続されている全てのケーブル類を外します。
2. 図 1 を参考に、4 本のネジを外して上ケースを外します。
ケースが外れにくい場合は、下側のネジを緩めてください。
3. 図 2 を参考に、ジャンパー (J1006) の設定または、スイッチ (S1001) の切り換えを行います。
4. 上記 2 で外したネジ 4 本で、上ケースを取り付けます。
5. 上記 1 で外したケーブル類を接続します。

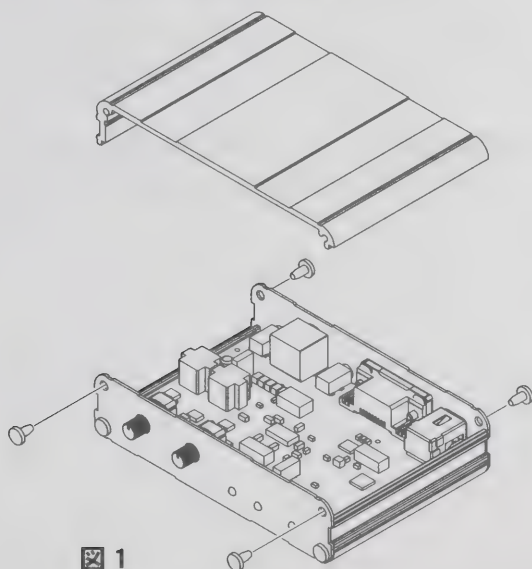


図 1

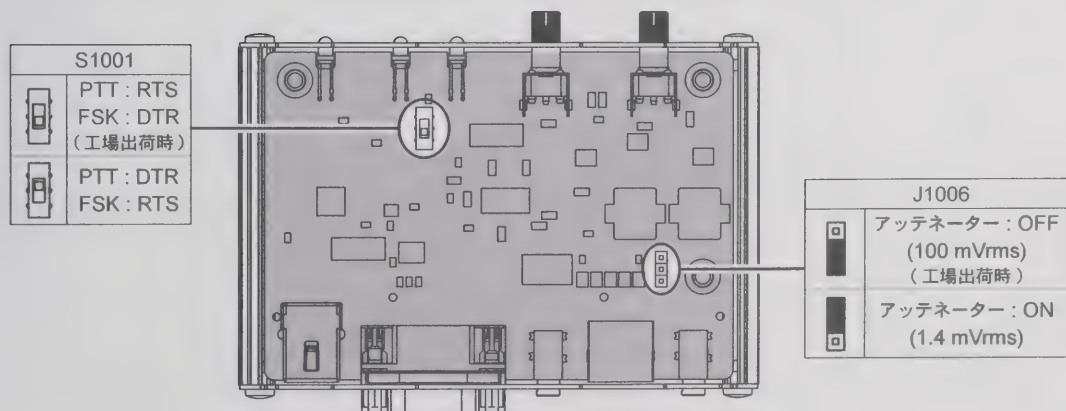


図 2

定格

電源電圧： DC 5.0V \pm 5%、（マイナス接地）

消費電流： 約 130mA

入出力レベル： DATA ジャック

PTT 出力端子：最大 +25V, 50mA（オープンコレクタ制御）

FSK 出力端子：最大 +25V, 50mA（オープンコレクタ制御）

DATA-IN：100mVrms @ 10k Ω

DATA-OUT：100mVrms @600 Ω

FSK/PTT ジャック

PTT 出力端子：最大 +30V, 250mA（オープンドレイン制御）

FSK 出力端子：最大 +30V, 250mA（オープンドレイン制御）

AUDIO ジャック

DATA-IN 端子：100mVrms @600 Ω

DATA-OUT 端子：100mVrms @600 Ω

CAT/RS-232C ジャック

RS-232C レベル

USB ジャック

USB 1.1 または USB 2.0（バスパワー電源供給）

寸法： 111（幅） \times 25.4（高さ） \times 74（奥行き）mm

重量： 約 230 g

本製品または他の当社製品についてのお問い合わせは、お買い上げいただきました販売店または、当社アマチュアカスタマーサポートにお願いいたします。

アマチュアカスタマーサポート

〒140-0002 東京都品川区東品川 2-5-8 天王洲パークサイドビル

電話：03-6711-4045

YAESU



Declaration of Conformity

We, YAESU UK LTD. declare under our sole responsibility that the following equipment complies with the essential requirements of the Directive 1999/5/EC and Directive 2011/65/EU.

Type of Equipment: USB Interface Unit

Brand Name: YAESU

Model Number: SCU-17

Manufacturer: YAESU MUSEN CO., LTD.

Address of Manufacturer: Tennozu Parkside Building, 2-5-8 Higashi-Shinagawa,
Shinagawa-ku, Tokyo 140-0002 Japan

Applicable Standards:

This equipment is tested and conforms to the essential requirements of directive, as included in following standards.

EMC Standard: EN 61000-6-1: 2007

EN 61000-6-3: 2007 + A1: 2011

RoHS2 Standard: EN 50581:2012

The technical documentation as required by the Conformity Assessment procedures is kept at the following address:

Company: Yaesu UK Ltd.

Address: Unit 12, Sun Valley Business Park, Winnall Close, Winchester
Hampshire, SO23 0LB, U.K.

Disposal of your Electronic and Electric Equipment

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste by products.

In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.



YAESU

The radio

YAESU MUSEN CO., LTD.

Tennozu Parkside Building

2-5-8 Higashi-Shinagawa, Shinagawa-ku, Tokyo 140-0002 Japan

YAESU USA

6125 Phyllis Drive, Cypress, CA 90630, U.S.A.

YAESU UK

Unit 12, Sun Valley Business Park, Winnall Close
Winchester, Hampshire, SO23 0LB, U.K.

YAESU HK

Unit 2002, 20/F, 9 Chong Yip Street,
Kwun Tong, Kowloon, Hong Kong

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1308E-0Y



EAK21X701

Installing the virtual COM port driver software on a computer makes possible CAT communication via a USB cable to the SCU-17. This will allow computer control of TX (PTT, FSK).

The SCU-17 is equipped with two virtual COM ports, which can be used for CAT communication and TX control operations.

This installation program is provided by [Silicon Labs, Inc.](#)

Please read this entire manual carefully. If you agree to the content of this manual, download and install the virtual COM port driver.

Operating Environment

Supported Operating Systems

- Microsoft® Windows® 8.1
- Microsoft® Windows® 8
- Microsoft® Windows® 7
- Microsoft® Windows Vista® (Service Pack 1 or later)
- Microsoft® Windows® XP (Service Pack 3 or later)

Port

USB port (USB1.1/USB2.0)

Cable

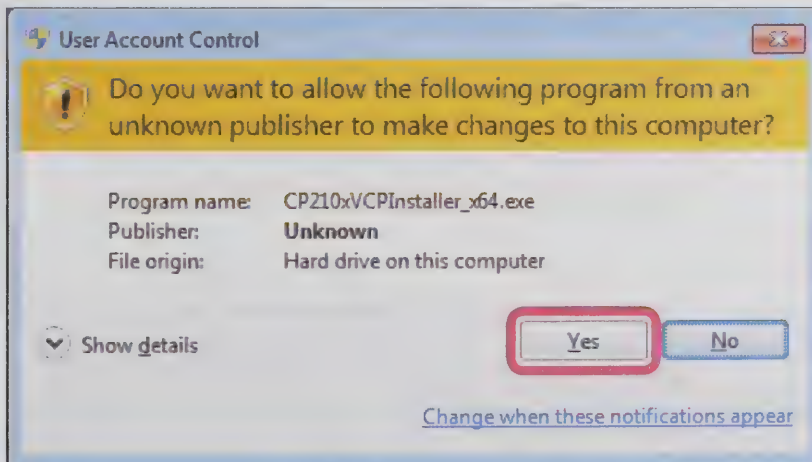
Use a supplied AB USB cable

Installing the Virtual COM Port Driver

Caution: Do not connect the SCU-17 to the computer via the USB cable until the virtual COM port driver installation process has been completed. Connecting the transceiver to the computer via the USB cable before installation has been completed may result in the wrong driver being installed, preventing proper operation.

The procedure for installing the virtual COM port driver on a Windows® 7 system is shown below

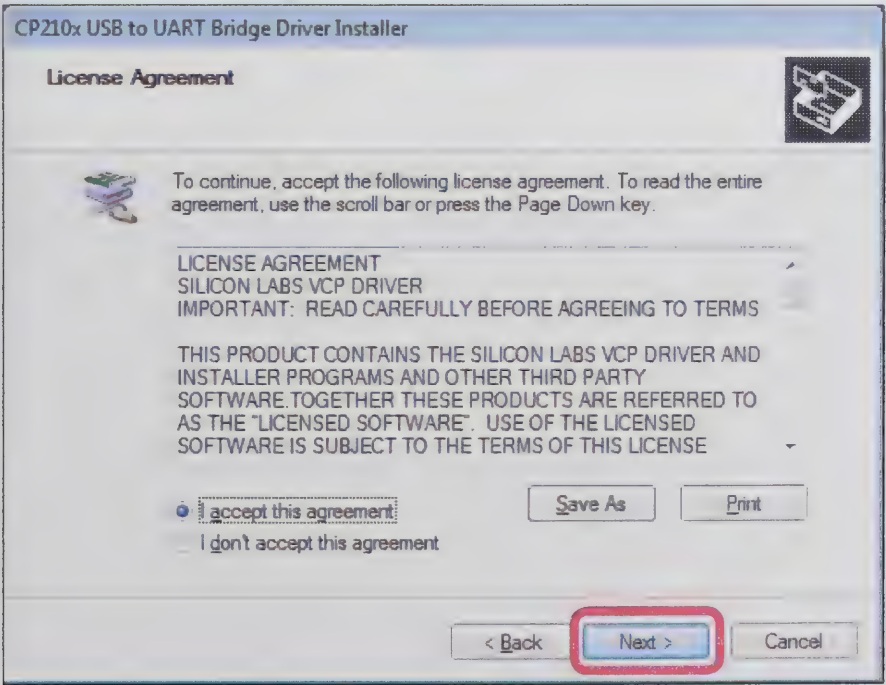
1. Start Windows® 7.
2. Shut down all running applications.
3. Unzip the downloaded (CP210x_VCP_Windows.zip) file.
4. Run the installation program (for 64bit: CP210xVCPInstaller_x64.exe, for 32bit: CP210xVCPInstaller_x86.exe) by double-clicking it. The following window will appear. Click the "Yes (Y)" button.



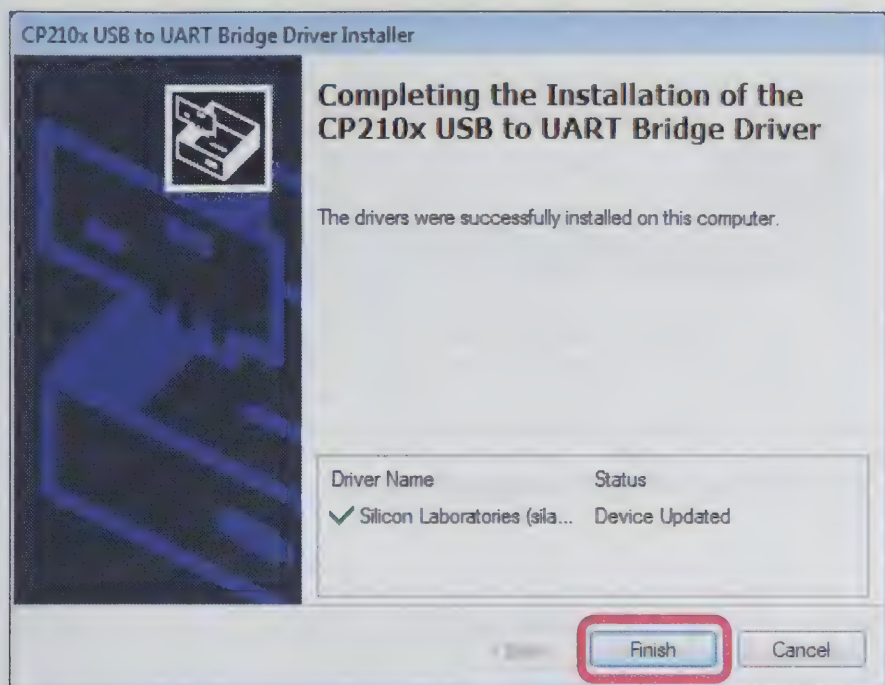
5. The following window will be displayed. Click the "Next >" button.



6. The "License Agreement" window will be displayed. Please read the License Agreement, and, if you agree to the terms therein, click the checkbox next to "I accept this agreement", and click the "Next >" button.



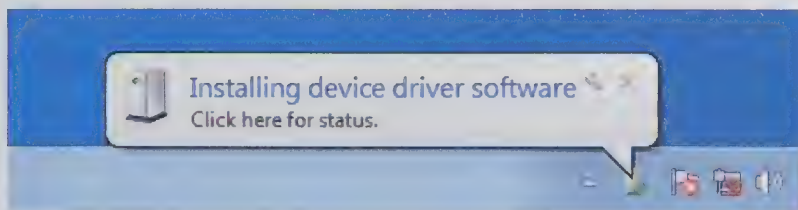
7. When the driver installation has been completed, the following window will be displayed. Click the "Finish" button.



Connecting the Transceiver and the Computer

Connect the computer and the SCU-17 via supplied USB cable.

A message such as the one below will be displayed, and the computer will recognize the new hardware and automatically begin device driver installation.



When "Your devices are ready to use" appears, installation has been completed.

A reboot confirmation window may be displayed on some computers. If this window appears, follow the on-screen instructions and reboot the computer.

Once the computer has been rebooted, the virtual COM driver and USB audio driver will be installed.

(The standard Windows® USB audio driver will be automatically installed, so you do not need to specify which driver to use.)

How to Confirm the Installation, and the COM Port Number

With the SCU-17 and computer connected, confirm whether the virtual COM driver has been installed successfully.

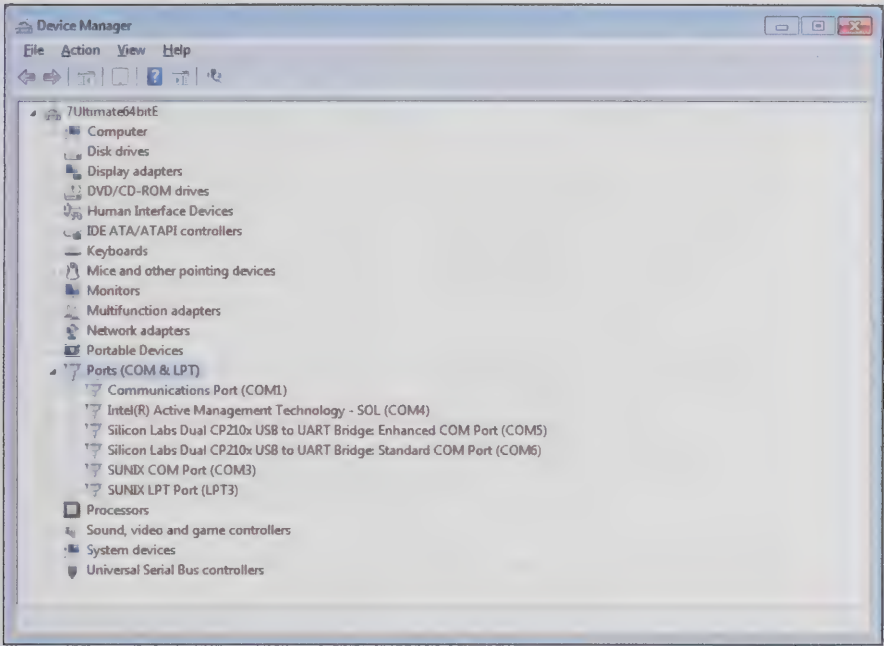
The example below is for Windows® 7.

1. Click the Windows® "Start" button → Right-click "Computer" → Click "Properties (R)".
2. Click "Device Manager" on the window that appears.
3. On the Device Manager screen, double-click "Port (COM & LPT)".

「Silicon Labs Dual CP210x USB to UART Bridge : Enhanced COM Port (COM5)」

「Silicon Labs Dual CP210x USB to UART Bridge : Standard COM Port (COM6)」

The number in the "(COM**)" portion may vary from computer to computer.



SCU-17 contain two virtual COM ports, an Enhanced COM Port and a Standard COM Port. These ports offer the following functions.

- CAT communications..... Enhanced COM Port
- TX control (PTT, FSK)..... Standard COM Port

The above window shows that COM5 can be used for CAT communications, and COM6 can be used for TX control (PTT, KEY, FSK).

Select the COM port numbers confirmed using the procedure above when performing software port configuration.

Caution:

- If a "!" or "X" is displayed for the port on the Device Manager, uninstall and reinstall the virtual COM driver.
- If an SCU-17 with a different serial number is connected and turned on, different COM port numbers will be assigned to it, making it possible to perform individual COM port configuration for separate SCU-17.
- When using the USB cable to perform TX control, the transceiver may switch to transmit mode when the computer is started, etc.
- Always shut down the application on the computer before disconnecting the USB cable.

Agree and Download

Download the virtual COM port driver installation program from our download site if and only if you agree to all of the above.

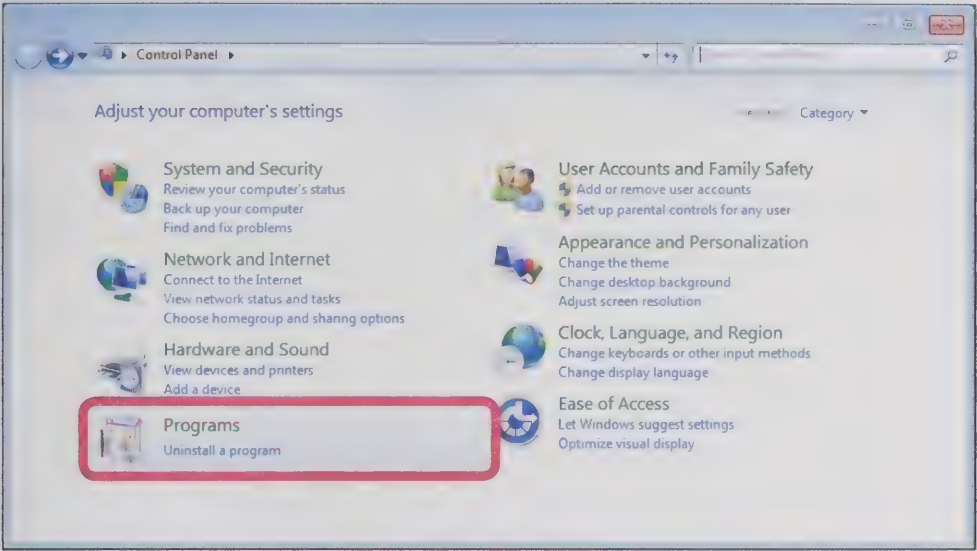
The latest version of the virtual COM port driver can be downloaded from the Silicon Labs, Inc. website (<http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpcdrivers.aspx>).

(The above Silicon Labs, Inc. website link URL current as of Feb, 2015.)

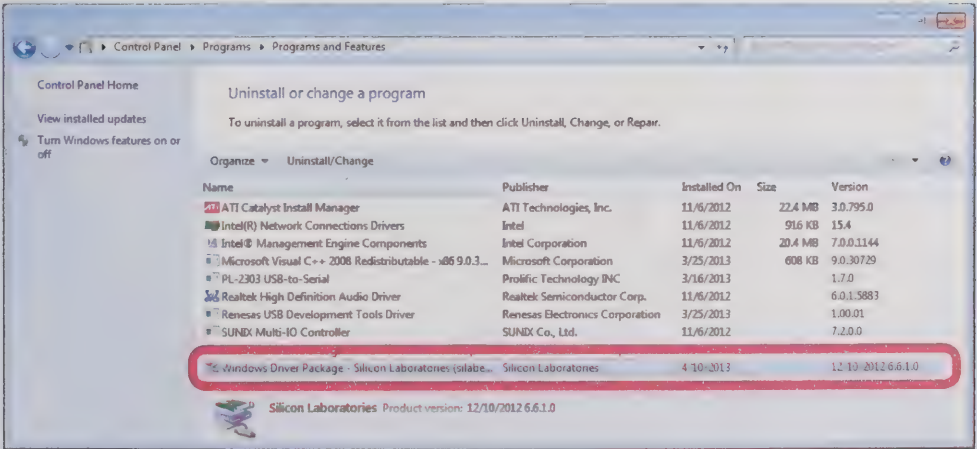
Uninstalling the Driver

The procedure for uninstalling the virtual COM port driver on a Windows® 7 system is shown below.

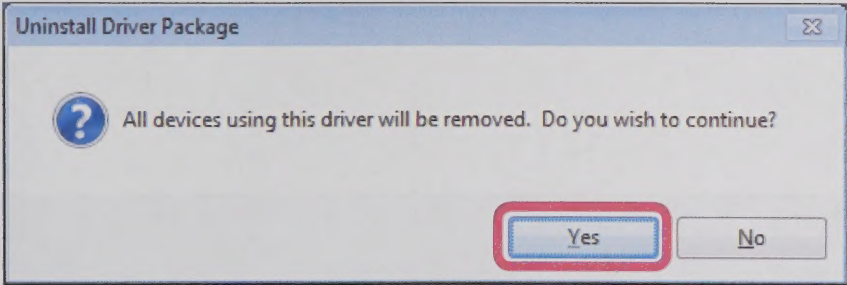
- 1. Click the Windows® "Start" button, and click "Control Panel".
- 2. Click "Uninstall or change a program".



- 3. Uninstall the following program.
"Silicon Laboratories CP210x USB to UART Bridge (Driver Removal)"
- 4. Double-click "Windows Driver Package – Silicon Laboratories (silabenm) Ports (****)".



5. The following window will be displayed. Click the “Yes” button.



6. Follow the on-screen instructions. If a message appears indicating that the system should be rebooted, follow the on-screen instructions and reboot the computer.

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